Fair play in the digital arena

How Europe can set the right framework for platforms

Roland Berger

IEF

The path to more competition and faster growth

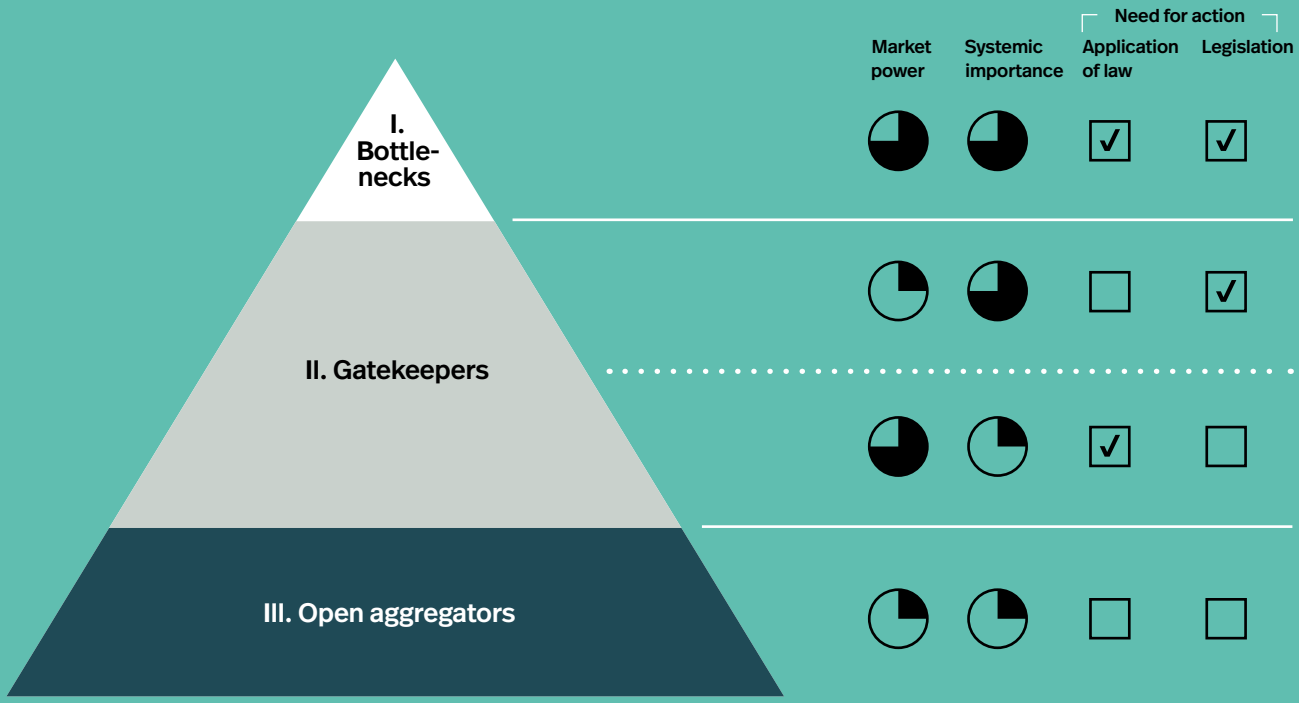
Agenda for Europe's own digital economy

Target scenario

We need an Internet economy that is strong on innovation and adds substantial value, where fair competition prevails, data is handled in a trustworthy manner and companies act responsibly. Independent digital platforms must become the standard-bearers of a new economic dynamism in Europe.

Regulatory framework

New rules to boost competition: Each platform type needs a different approach to both legislation and the application of law



Source: Roland Berger

Agenda

1. A genuine Digital Single Market instead of a European patchwork
2. Equal rights for all providers in a given market
3. Faster reaction by antitrust authorities to cases of abuse
4. Assessment of mergers based on the purchase price, not just on revenue
5. Easier portability of user data to other platforms
6. Wider choice of key Internet applications
7. Better access to digital infrastructures for companies
8. Sensible bundling of government competencies for digital markets
9. Close collaboration on standards and innovation
10. More growth capital for innovative start-ups

Fresh dynamism in the Internet economy

Friedbert Pflüger
Chairman
Internet Economy
Foundation

Since the IE.F and Roland Berger published their collaborative study "Going digital. Seven steps to the future" in April 2016, the Internet economy has once again gathered fresh momentum. Digital platforms are regarded as the most powerful exponent of this economy. Although everyone seems to have a different understanding of what they actually are (this study ventures an attempt at a definition on pages 30 ff.), more oil has recently been poured on the fire of political debate surrounding the market position of digital platforms and the need to adapt the rules of competition. Let us briefly review a few of the key points:

One after the other, Google, Facebook and Amazon all announced record earnings in July 2016. Despite a decline in revenue, Apple remains the most valuable company in the world. Economists are already talking about **GAFAnomics** (Google, Apple, Facebook and Amazon) and **superstar economics**.

In Europe, the European Commission and several national antitrust authorities have opened **abuse proceedings** that target the competitive practices of Google and Facebook. The Commission has filed a "Statement of Objections" and is looking to launch further proceedings against Google.

Criticism of digital platforms' **competitive behavior** is also growing louder in US political circles: The Federal Trade Commission (FTC) has been investigating Google's licensing policy for its Android mobile operating system since the autumn of 2015. And recently, influential Democratic Senator Elizabeth Warren even labeled the market-dominating position of Google, Apple and Amazon a "threat to democracy".

In September 2015, the European Commission opened a **consultation process** surrounding the regulatory environment for online platforms, submitting its preliminary final report in May 2016. On the basis of this report, legislative options – in particular for platforms' behavior in the B2B context – are to be drafted by spring 2017. At the same time, guidelines on application of the Unfair Commercial Practices Directive (UCPD) have been given a thorough overhaul, not least with a view to new business models in the digital realm. A revision of the directive itself is currently the object of the REFIT program to improve the EU's legal provisions.

Clark Parsons
Managing Director
Internet Economy
Foundation

Meanwhile, Europe is aiming to very strongly increase the benefits it gains from the innovative and growth potential afforded by the Internet economy. The European Commission's strategy for a **Digital Single Market** should generate an extra GDP of EUR 415 billion per year. Projects such as the Free Flow of Data Initiative and an updated European Interoperability Framework are being launched to ramp up Europe's data economy.

In Germany, the Federal Ministry for Economic Affairs and Energy has published a **Green Paper Digital Platforms** to stimulate a public online participation process to which citizens, companies, associations and experts contributed until September 30, 2016. On this basis, a White Paper containing concrete regulatory proposals should be ready in early 2017.

Early in summer 2016, the *Bundeskartellamt*, Germany's independent competition authority, and its French counterpart, the *Autorité de la concurrence*, presented extensive papers on the **market power** of platforms and networks and on the evaluation of data in light of competition law. These papers are in part based on a special report on competition policy in digital markets published a year earlier by the German Monopolies Commission, an independent advisory board to federal government and lawmaking bodies.

Some of the proposals these papers contain have been included in the draft bill for the 9th amendment to the German **Act Against Restraints of Competition** (GWB), which Germany's competition authority is to adapt to the specific requirements of digital markets in particular. Here are some of the material amendments in brief: In the future, a market should exist even where services are provided free of charge. Plans also exist to introduce the value of the transaction as a new applicability criterion (alongside revenue thresholds) when overseeing mergers. Lastly, the draft wants to make it easier to file private actions for damages in the event of antitrust violations, and to reverse the burden of proof (i.e. to assume that damages have indeed been incurred in the event of antitrust violations).

Germany is keen to tackle the problem of growth financing for start-ups that we discussed in our first study. The Federal Ministry of Finance is currently hammering

out the basic parameters for a **Tech Growth Fund** to be cofinanced – to the tune of EUR 20 billion – by federal government and venture capital providers. The need to promote digital start-ups appears all the more urgent now that business launch activities in Germany have fallen to an all-time low.

One other structural problem, however, will remain unresolved for the foreseeable future: A ubiquitous fiber optic broadband network is essential to develop and expand a highly competitive European Internet economy. Only then will new services such as autonomous driving become at all possible. And only then can investors be found who will pump money into such capital-intensive, high-risk projects for the future. Although the importance of **fiber optics** has long since been recognized, not least for powerful mobile networks, Germany and many other European countries are still moving too slowly. Its eyes fixed rigidly on 2018, the German government is sticking to its not exactly ambitious goal of delivering a nationwide 50 Mbit/s network. It is nevertheless patently obvious that, due to the ongoing investment logjam for high-speed Internet and the fact that transitional technologies such as vectoring are being kept alive artificially, Germany in particular lacks even basic conditions for a competitive and powerful platform economy. Some countries in Asia (South Korea, Japan, Singapore) and some European economies too (Sweden, Norway, the Netherlands) are literally years ahead in terms of network infrastructure development. To make up the lost ground regarding high-speed Internet, a competition-friendly legal framework is an important requirement, as recently shown by the IE.F study "Europe's Next Generation Networks: The Essential Role of Pro-Competitive Access Regulation".

Current developments raise economic and governance questions. And, looking at the rapid growth of leading platforms in the US and Asia in particular, these are questions that must be answered very quickly: How important are digital platforms to the dynamic development of an economy? Are they the savior that can solve the problem of persistent stagnation? Or do they potentially pose a threat to our competitive order? These questions address fundamental convictions, because platforms – as even their critics would not deny – are powerful and sustainable sources of stimulus not only for the Internet economy, but for society as a whole. They bring change to many areas of daily life, from the initiation and completion of business transactions to consum-

ers' usage preferences and consumption patterns to the way we as individuals relate to and communicate with each other. What is at stake here is nothing less than the design and modification of our socioeconomic order in the digital age.

That is why this debate should, indeed must also be carried out in the political arena. The election of the German Bundestag and France's presidential elections in 2017 will be important **milestones that chart the course ahead**. Platforms are an essential ingredient in our private life and the world of work. Yet large swathes of the population are still uncertain about how they even work and what they do – and we're addressing a topic that concerns every individual citizen!

In its capacity as a non-partisan think tank and independent advisor, the IE.F has, together with Roland Berger, gathered, consolidated and refined the key arguments and positions on the handling of digital platforms. This study lays a solid factual foundation for informed discourse on the subject and ultimately appeals for a view that takes each aspect on its own merits: Yes, digital platforms are engines of growth. Yes, they can play a decisive part in driving innovation in our European economies and generating substantial welfare effects from which every consumer will benefit. If all this potential is to be fully realized, however, digital platforms require a regulatory framework that ensures fair competition and genuine freedom of choice on digital markets, a framework that gives new and innovative providers unhindered access to the market. The goal of an innovative, competition-friendly, fast-growing Internet economy – a goal we have translated into ten specific recommendations for action – should become the guiding principle behind German and European competition policy.

We look forward to both constructive collaboration and critical dialogue with everyone who wants to play an active part in realizing this goal.

“To a very great extent, we can only stake out the framework for innovation, growth, competition, security, consumer protection and data protection in the digital economy if we do so together at the European level.”

German federal ministers **Sigmar Gabriel** (Economic Affairs and Energy), **Thomas de Maizière** (Interior), **Heiko Maas** (Justice and Consumer Protection) and **Alexander Dobrindt** (Transport and Digital Infrastructure) in a joint letter to the EU Commission

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TRIUMPHAL MARCH: THE MARKET POSITION OF DIGITAL PLATFORMS

Digital platforms innovate. They add value.
As such, they are key players in today's global economy.
Yet Europe still derives too little benefit
from their growth potential.

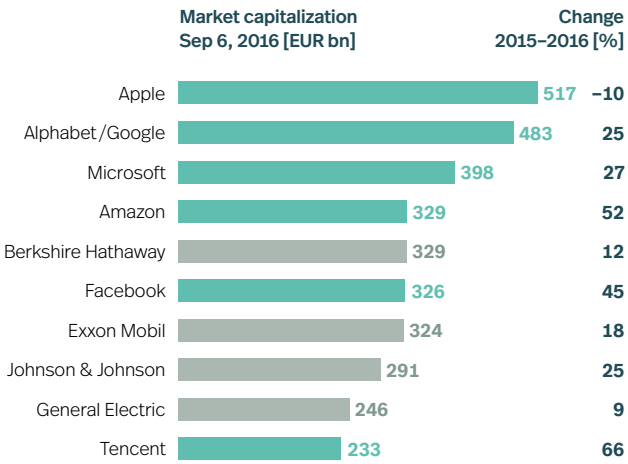
Digital platforms are the economic superstars of our day. Around the globe, they inspire dreams of virtually limitless growth. Thanks to their potential to add value and drive innovation, they dominate not only the Internet and its ecosystems, but increasingly the whole of the global economy. A few numbers illustrate what we mean:

- Right now, the four largest companies in the world (measured by market capitalization) are digital platforms (Apple, Alphabet/Google[1], Microsoft and Amazon). Of the top ten, Facebook and Tencent are two further companies built entirely on network-based business models. →A
- Four of the five most valuable brands in the world today are digital platforms. Apple, Google and Microsoft have long occupied top slots in the annual Forbes ranking. This year, Facebook added yet another digital platform to the top five. Coca-Cola is now the last remaining veteran of the "old economy" to still figure in this elite group. →B

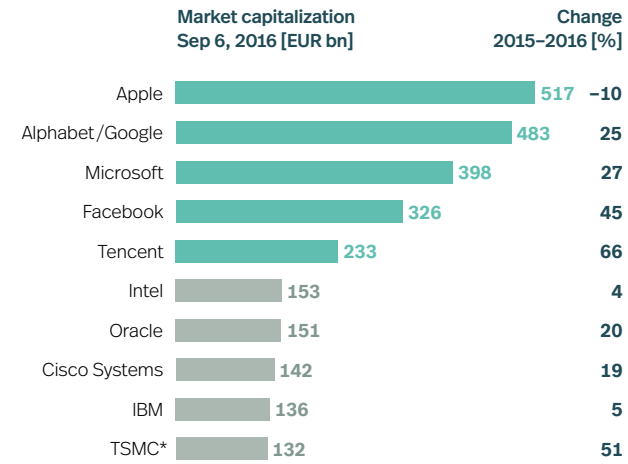
1 Alphabet Inc. was founded on October 2, 2015, as the parent company of Google Inc. Its core business still operates under the former name.

A Price premium: 6 of the 10 most valuable companies in the world are digital platforms – as are all of the top 5 technology companies

Top 10 global companies



Top 10 global technology companies



digital platforms others Sources: Bloomberg; Roland Berger

*Taiwan Semiconductor Manufacturing Co

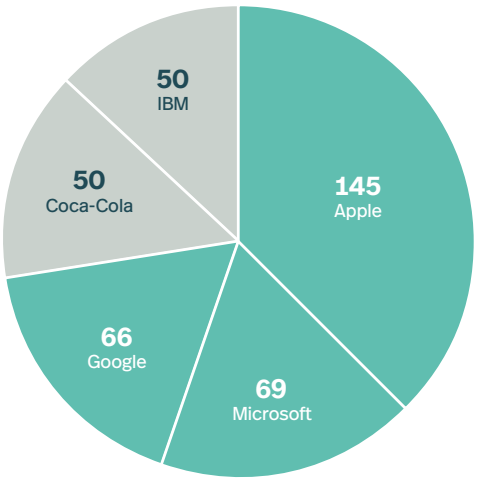
- Some digital platforms are as big as national economies. In the second quarter of 2016, Facebook claimed to have more than 1.7 billion "monthly active users" – roughly 300 million more than the population of China. In 2015, Apple generated revenue totaling USD 233 billion. This figure is equivalent to the gross domestic product of a medium-sized country such as Finland.

Digital platforms develop new, highly scalable business models with which they are conquering industry after industry, region after region, market after market. This alone is reason enough for political and economic decision-makers to ask some serious questions about the phenomenon of the platform economy: On what have digital platforms based their triumphal march? How can national economies benefit from their economic dynamism? How can the regulatory framework be designed in such a way that welfare gains are maximized and any negative side-effects are contained? This study answers these questions and, in so doing, formulates guidelines for the promotion of innovation-friendly competition that gives a fair chance to all market players.

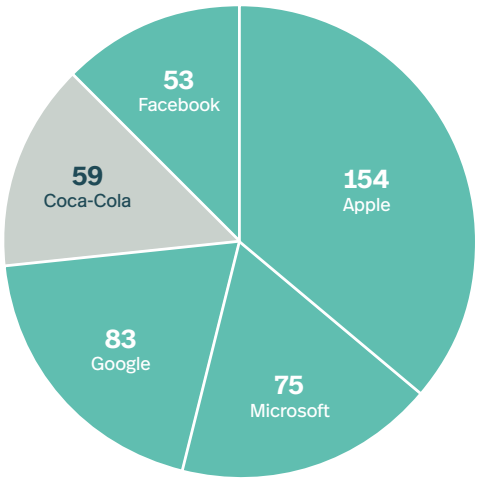
B Big names: The most powerful brands today come from the Internet economy

Brand value according to Forbes, 2015 and 2016 [USD bn]

2015: Platforms = USD 280 billion (73%)



2016: Platforms = USD 364 billion (86%)



Sources: Forbes.com; Roland Berger

“It’s quite likely that Google, Facebook and the rest will eventually run the basic infrastructure on which the world functions.”

Evgeny Morozov
Writer and Internet researcher, Harvard University

1. Key players in the Internet economy

A glance at the market position of digital platforms shows that they have become both the point of reference and the focal point of the Internet economy. All ten of the most-visited websites in the world today are platforms, with YouTube, Google and Facebook the undisputed leaders. Eight places in the top ten are occupied by US players, the remaining two by Chinese platforms. →C

The volume of data that these platforms handle and the bandwidth they need to do so are growing exponentially. YouTube and Facebook alone account for around a third of all mobile data traffic in the world. Platforms are evolving into hubs that coordinate and control all central nodes of the Internet. Estimates suggest that Alphabet/Google, Microsoft and Amazon each operate more than a million servers.

For companies in the old economy too, platforms are gaining in importance: as sales channels, advertising media and business partners. Coverage of just under a third (29%) of the global population makes social media an indispensable marketing tool: Four out of five Fortune Global 100 companies today use at least one social media channel to communicate with their customers. Chinese trading platform Alibaba serves as the intermediary for transactions between 30 million retailers and 350 million consumers. It thus controls 80% of the country's e-commerce.

To put it bluntly: Without platforms, nothing runs on the Internet any more. Other markets and industries too are closely bound up with today's platforms. Private users need them to access information, source content and/or communicate with each other. Commercial users need them as an intermediary to their customers. The entirety of Internet connectivity and intelligence – connected society itself – is today bundled on platforms.

These circumstances are all the more remarkable given that a number of digital platforms occupy dominant competitive positions in their respective segments, possessing market shares that are frequently well above the critical antitrust threshold of 40% (the point at which Germany's GWB law presumes market dominance) or 50% (the limit under jurisprudence of the European Court of Justice). To take just one example: With its Google search engine and its mobile operating system Android, Alphabet holds a monopolistic competitive position in two sensitive market segments. →D

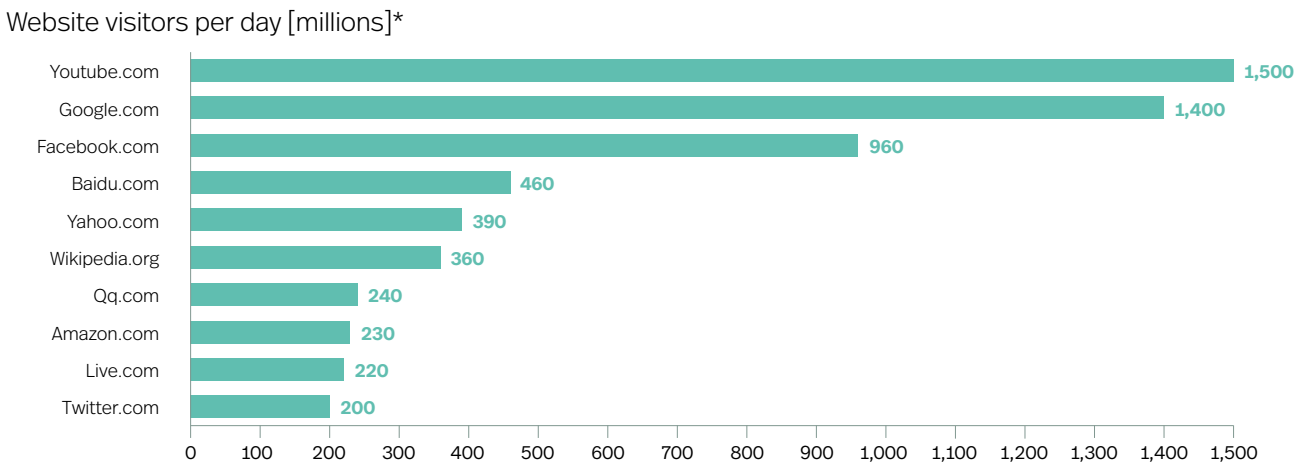
Thanks to their key strategic position at the interface to the customer, digital platforms are currently experiencing a start-up boom. Depending on how exactly you define them, between 50 and 70% of all unicorns (start-ups with valuations in excess of USD 1 billion) today operate platform models. They also benefit from the fact that venture capital (VC) companies, which focus on growth and the return on investment, today give preferential treatment to investing in digital start-ups. To date, Uber and Airbnb have thus received venture capital equivalent to 15 or 20 times their revenue. For Dropbox, the factor is 40.

Real economic development confirms the attraction of digital business models. Platforms are the most dynamic drivers of the Internet economy, having overtaken the key performance indicators of other companies. Again, here are a few examples:

- On the stock markets, digital platforms currently command higher valuations than comparable old-economy industrial companies, even though stock prices are showing signs of a mild correction. →E
- The profitability (EBIT margin) of Facebook, Apple and Alphabet/Google surpassed the 25% mark in 2015. Top performer Facebook managed 35% – compared with 10% at BMW.
- Both the market capitalization and the enterprise value of the leading platforms – Alphabet/Google, Apple, Facebook and Amazon – have quintupled over the past ten years.

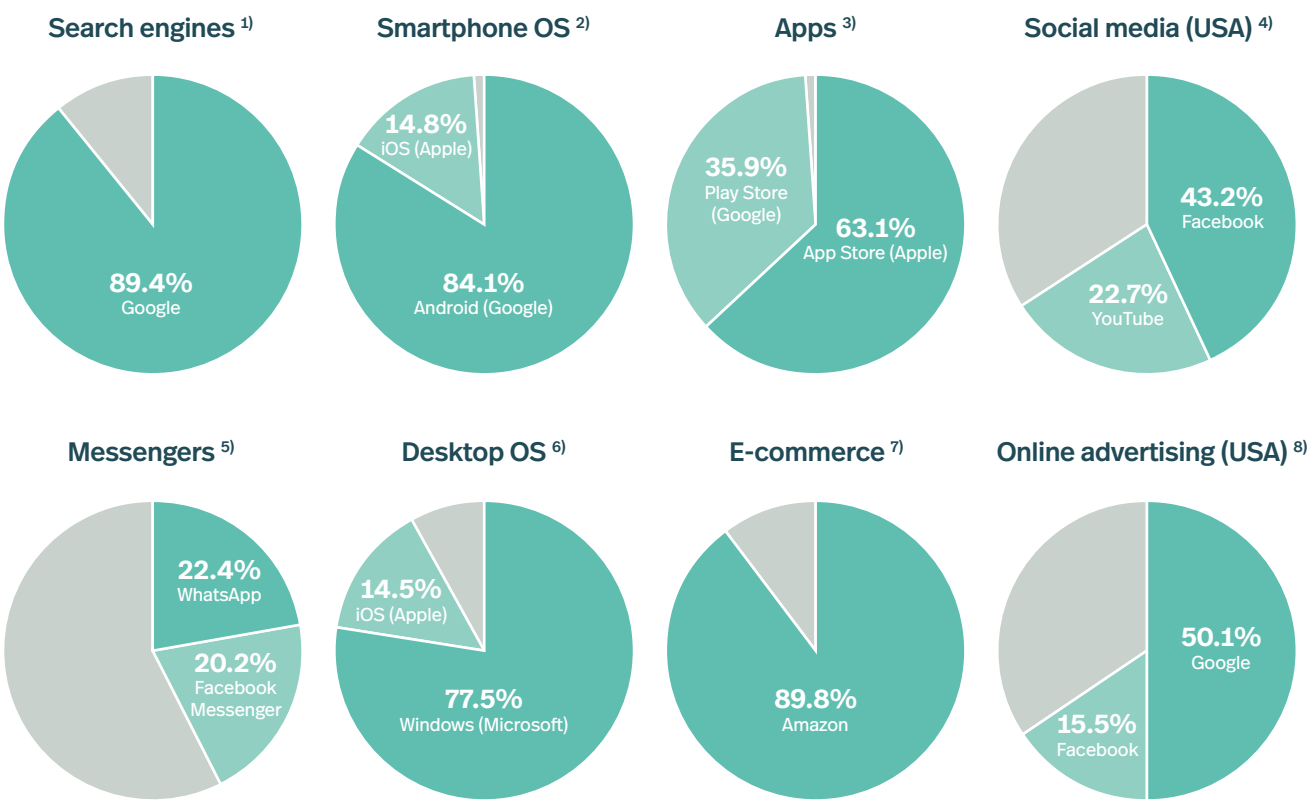
Where do such value gains come from? Are we witnessing a bubble similar to that in the financial economy leading up to 2008? Or are the valuations of these market players fundamentally sound? Analyzing the drivers of the Internet economy makes it clear what the competitive advantages of digital platforms are and what gives them such an enviable position.

C Main attractions: Without exception, all of the world's most frequently visited websites are digital platforms



Source: Alexa *as of Sep 11, 2016

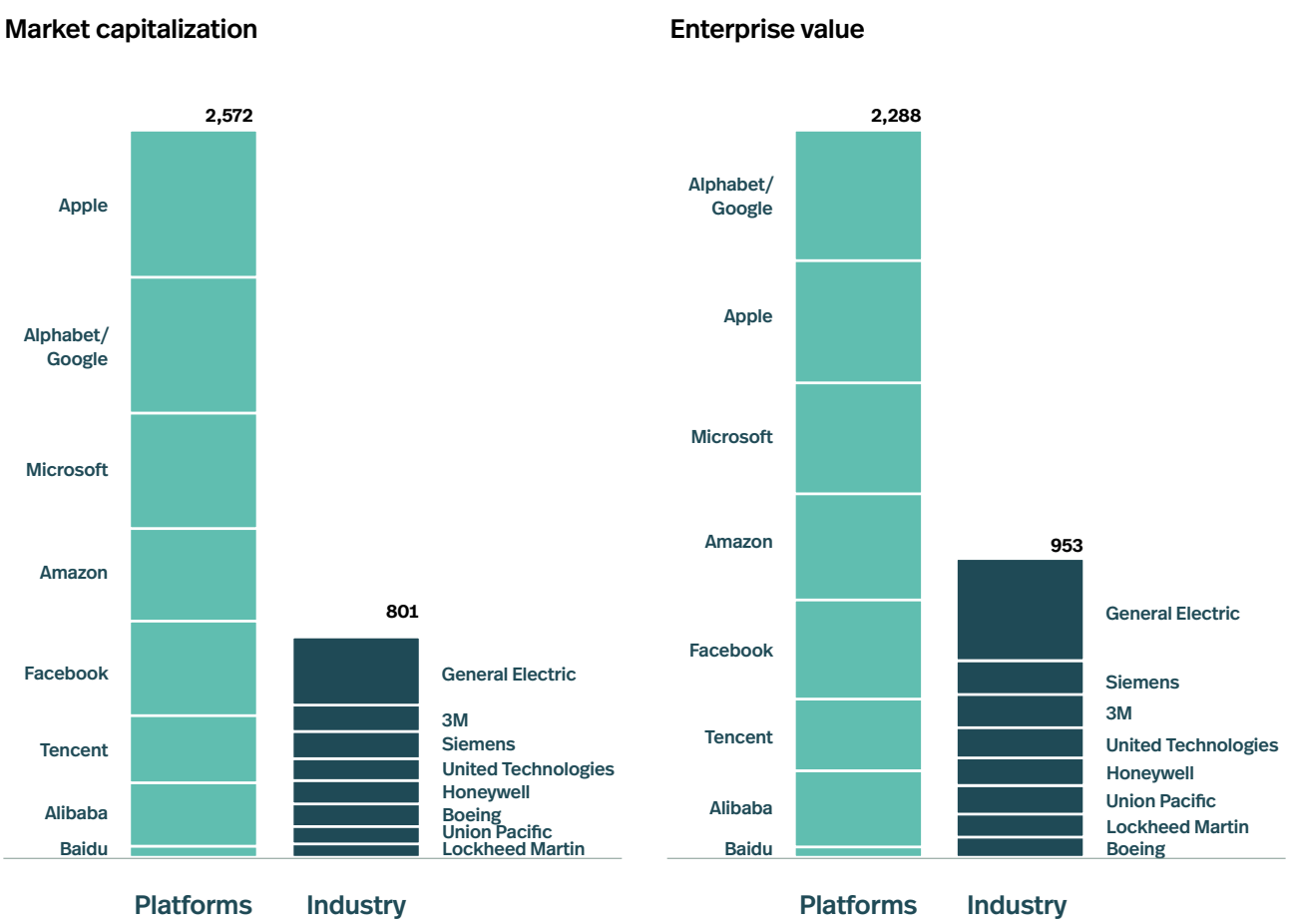
D The chosen few: Digital platforms have attained dominant market positions in their respective segments



1) Global market share of search engines, April 2016, Statista
2) Market share of operating systems on smartphones sold worldwide, Q1 2016, Statista
3) Global share of app sales revenues, 2015, Statista, App Annie
4) Social media sites in the US by share of visits, May 2016, Statista
5) Global share of active users of the 10 most popular messengers, April 2016, Statista
6) Global market share of stationary operating systems, December 2015, Statista
7) World's 3 biggest e-commerce companies' share of revenue, 2014, Statista
8) Online advertising revenue in the US, 2015, KPCB

E Darlings of the market: The leading digital platforms have much higher valuations than the world's biggest industrial companies

Comparative valuation of platforms and industrial companies, global top 8 [EUR bn] *



Sources: Bloomberg; Roland Berger * as of Sep 6, 2016

2. Innovation and value-added potential

Digital platforms are powerful drivers of innovation, productivity and growth. Numerous market players and economies benefit from the value that they add. Some aspects of their economic performance and impact are known, while others have yet to come to public attention. →F

Platforms' capacity for radical innovation is their most obvious trait. They advance the economic structural transition by providing new and often tailor-made products and services at a pace and with a diversity that are hitherto unheard-of. New combinations and bundles of these products and services are another regular feature. Tourism portals such as TripAdvisor, for example, do more than merely let users write and read travel reports. Users can also book entire journeys, including flights, accommodations, restaurant visits and car rentals. They can even charter boats, all via one and the same customer interface. Other services such as online auctions for used goods or advertising slots, audio/video streaming and even the free and global sharing of self-produced content were never invented until platforms came up with them.

Slightly less obvious than radical product and service innovations are the business model innovations associated with platforms. The sharing approach adopted by Uber and Airbnb, for example, enables better use of resources at lower prices in the taxi and hospitality industries respectively. Both companies have thus successfully penetrated new markets and enlarged existing ones. Personal driving services and comfortable city-center accommodation are now more affordable even for less well-off customers.

Consumers benefit from these offerings in many and varied ways. The price reductions alone that online platforms deliver thanks to greater market transparency and more intensive competition are at least EUR 1 billion – EUR 50 per consumer and year – across the whole of Europe, according to one rather conservative study by Copenhagen Economics. In addition, there is a broader range of offerings, conveniences such as home delivery and both time savings and time independence in the purchasing process. Selling, renting and services provided as side ventures also create opportunities to earn a not insignificant additional income.

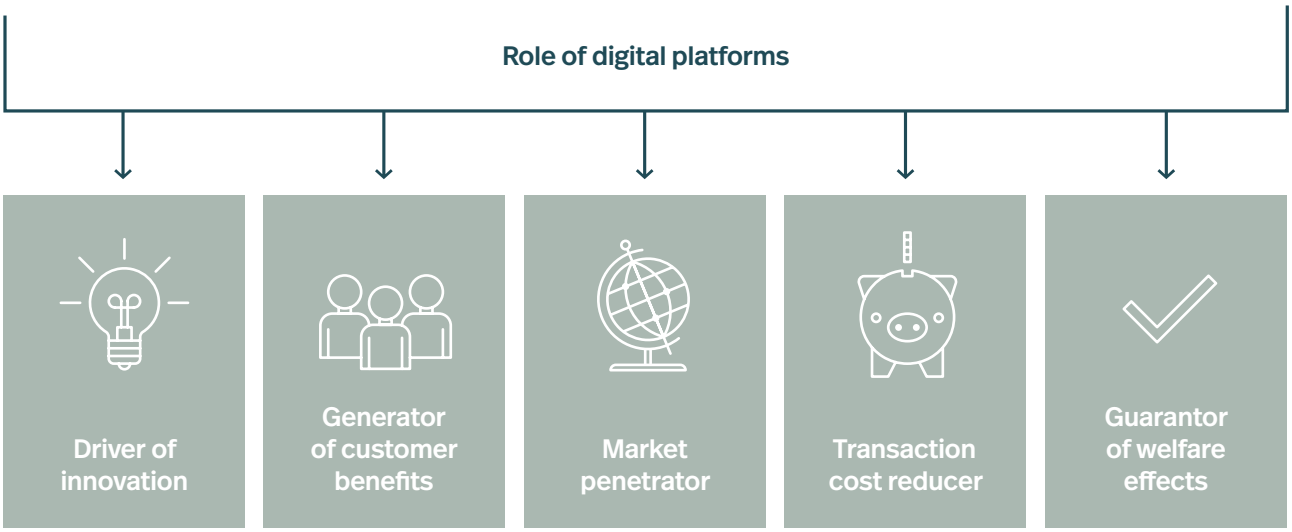
The demand side stands to benefit to the same extent as the supply side: Small and medium-sized enterprises (SMEs) in particular often have only modest marketing budgets and can gain easier access to the market through platforms. Platforms enable them to market their products and services more widely, with greater geographical coverage and less scatter loss. SMEs also enjoy superior export options, while channels such as direct sales can help them save a great deal of money.

Innovation, customer benefits and market penetration are key levers with which platforms improve the efficiency of economies. And they are far from the only ones:

Platforms hugely reduce transaction costs. That is true *ex ante*, i.e. ahead of a business transaction, where they

F Turbocharged growth: Digital platforms possess vast potential to drive innovation, value added and productivity

Economic benefits



Source: Roland Berger

reduce the cost of information, communication and negotiation. Clearly defined and standardized business procedures vastly simplify the process of matching buyers to sellers. Yet transaction costs are also reduced, even more so, *ex post*. Platforms minimize the logistical cost of transaction processing – not least the otherwise often prohibitive risk costs where especially valuable goods are purchased. Ratings given to the behavior of the contractual partner reduce the risk of partial or total loss, e.g. in the form of deficient performance or even fraud.

At the same time, lower transaction costs enable platforms to maximize scale. Additional units of value can be generated in return for a minimal investment of capital and resources. Marginal costs tend toward zero – hence the talk of a "zero marginal cost society" (Jeremy Rifkin) and of "superior marginal economics of production and distribution" (Parker/Van Alstyne/Choudary). Production and distribution at virtually no extra expense is central to the superiority of the network-based platform model over the cost-intensive replenishment of pipelines at traditional industrial companies.

This lean set-up offers even more crucial advantages. Fewer assets mean less path dependency. Platforms can act more flexibly in the market and react more quickly to changes in their environment. Why? Because they no longer need to fear sunk costs in the form of written-off investments in plants and machinery every time they need to change or adapt their business model. Network-based organizational designs also facilitate collaboration with externals. Platforms can coordinate far more resources than the pipelines that reflect linear value chain structures. This makes them more efficient, but also lets them exploit new sources of innovation.

Platforms' business models are making them both a success story for the companies that operate them and a guarantee of welfare gains for citizens and consumers. They increase market and price transparency, enrich the choice of goods and services on offer, simplify matching, improve customer orientation, create more efficient structures and establish standardized processes. Beyond that, they open up closed markets and invent completely new ones by eliminating frictions such as lack of trust and/or prohibitive costs (eBay auctions, Airbnb rentals, Uber driving services). Thus, they enable transactions to be made that would never have occurred without them.

Lastly, the platform model rests on the superior deployment of technology – not as an end in itself, but to maximize both efficiency and customer-centricity. The strategic use of technology is made possible by connecting more and more people and machines, by exponentially increasing computing power and transmission capacity, by improving production technology (miniaturization) and, most recently, by swapping infrastructures out to the cloud. The dream of the assetless company seems now to be almost within reach.

As they activate all these levers, platforms increase an economy's allocation efficiency, i.e. they ensure the more beneficial allocation of resources and production factors. Powerfully innovative, they generate economic stimulus and open up new lines of business. The dynamic way in which they add value gives them a unique

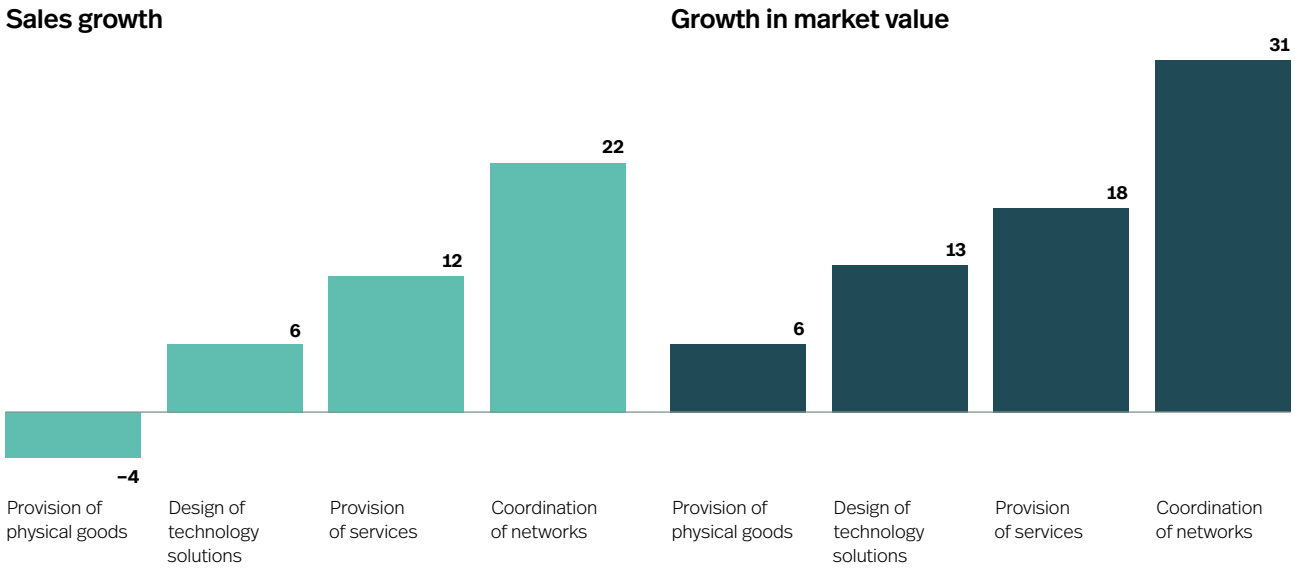
market position with sustainable competitive advantages. This in turn guarantees them top spots when it comes to market share, growth, profitability and other KPIs. All these benefits then also spill over to partner companies in their networks.

The extent of the possible efficiency gains from the specified factors is demonstrated by the ongoing structural transition in many industries. In the US, for example, the number of (bricks-and-mortar) travel agencies fell by a good half between 2000 and 2014. The corresponding decline in Germany was almost a third. Standard brokering services based on a linear value-added model and forced on the market at exorbitant advertising cost are scarcely able to compete these days.

The establishment of digital platforms may well trigger job losses in certain industries, though this does not

G Network revolution: The platform business generates an economic dynamism that is far superior to traditional business models

Growth dynamics, 2013–2015 [CAGR]



Sources: Bloomberg; Roland Berger

have to happen. Even so, there is no question that their business models are sustainably reinforcing both business dynamism and the ability of economies to innovate. Ultimately, therefore, they lead to welfare gains as well as greater competitiveness.

Comparison of growth in revenue and market capitalization for various business models over the past three years illustrates the sheer scale of this dynamic. On both counts, the coordination of networks has delivered far higher growth rates than the supply of physical goods, the design of technology solutions and the provision of services. →G

Given their superior allocation efficiency and lean organizational design, digital platforms are definitely not a passing fad: They are here to stay.

3. The European agenda

Digital platforms harbor economic potential of which Europe's share is currently too small. There are many reasons why this is so.

Let us briefly take stock: Of the 176 digital platforms examined by the Centre for Global Enterprise (CGE) in a global study at the end of 2015, only 27 are based in Europe. 82 can at least be assigned to the Asian region, while every fourth digital platform (44 in total) is headquartered in the Bay Area on the US West Coast. Finance, however, is concentrated even more heavily than the sector's geographic density: Operators in and around Silicon Valley alone account for more than 50% of the cumulative market capitalization of all platforms. →H

As things stand, Europe's role in the platform economy is largely restricted to that of a target market and development base for US-dominated app stores and software foundries. In terms of downloads of consumer apps, EU data puts Europe behind China but ahead of the US. 42% of global revenue from the sale of consumer apps was at least generated by European developers in 2013, with huge growth and employment potential remaining untapped. However, too little of the value added arrives in Europe, because the development of most consumer apps is farmed out to subcontractors.

This value-added shortfall – like the unparalleled concentration of technology and knowledge in Silicon Valley – is partly connected to the unequal conditions under which digital start-ups operate around the world.

“The tardiness of the government is one reason why Silicon Valley works so well.”

Sebastian Thrun
Company founder and artificial intelligence pioneer

Lesser financing conditions and, in particular, a lack of growth capital are two such conditions in Europe. Another relevant location factor is a noticeable regulatory divide, for example in the area of data protection. However, the US also suffers from problems with the time it takes for authorities to respond and with strict enforcement of the letter of the law. Ultimately, leading platform operators exploit these deficiencies to consolidate their market position. As German-American start-up entrepreneur and former Stanford professor Sebastian Thrun puts it: "The tardiness of the government is one reason why Silicon Valley works so well."

Many questions remain open but need to be answered if young players from Europe are to experience positive development and realize their creative potential:

- How can the fragmentation that characterizes Europe's Internet economy be overcome? What will it take to make the Digital Single Market a reality? Under what conditions can globally competitive platforms also come from Germany, from Europe, and develop a powerful economic dynamism?
- How can a harmonized regulatory policy framework be ensured across both national borders and industry boundaries? Should substitute services such as Skype and WhatsApp, for example, be treated in exactly the same way as their counterparts in the world of telecommunication (telephony, text messaging)?
- How much regulation is "right"? Should precedence be given to self-regulation, voluntary commitments and case-by-case decisions? Or to principle-based guidelines, tough sanction mechanisms and swift law enforcement? Are existing provisions sufficient, or are completely new ones needed?
- Lastly, the biggest challenge: How can the barriers to market entry be lowered? Should steps be taken to counter the "winner-takes-all" trend toward concentration in network-based markets? Or will the dominance of a single platform ultimately maximize economic efficiency?

On the last question in particular – whether monopolistic markets can be efficient – there are increasing signs that a Transatlantic consensus is forming. As recently as two years ago, German-American venture capitalist Peter Thiel wrote, in a piece entitled "Competition is for losers", that monopoly profits can drive innovation, because only companies with no direct competition are able to accumulate the capital they need for moonshot projects. "Monopolists," he wrote, "can afford to think about things other than making money; non-monopolists can't."

Contrary to this fundamentally libertarian understanding, the realization is now spreading in the US that you can't get by without a clearly defined regulatory framework. At the end of June 2016, influential Democratic US Senator Elizabeth Warren had this to say on the subject: "Google, Apple, and Amazon deserve to be highly profitable and successful. But the opportunity to compete must remain open for new entrants and smaller competitors that want their chance to change the world again."

Even more so in Germany and France than in the US and Asia, the concentration of market power is believed

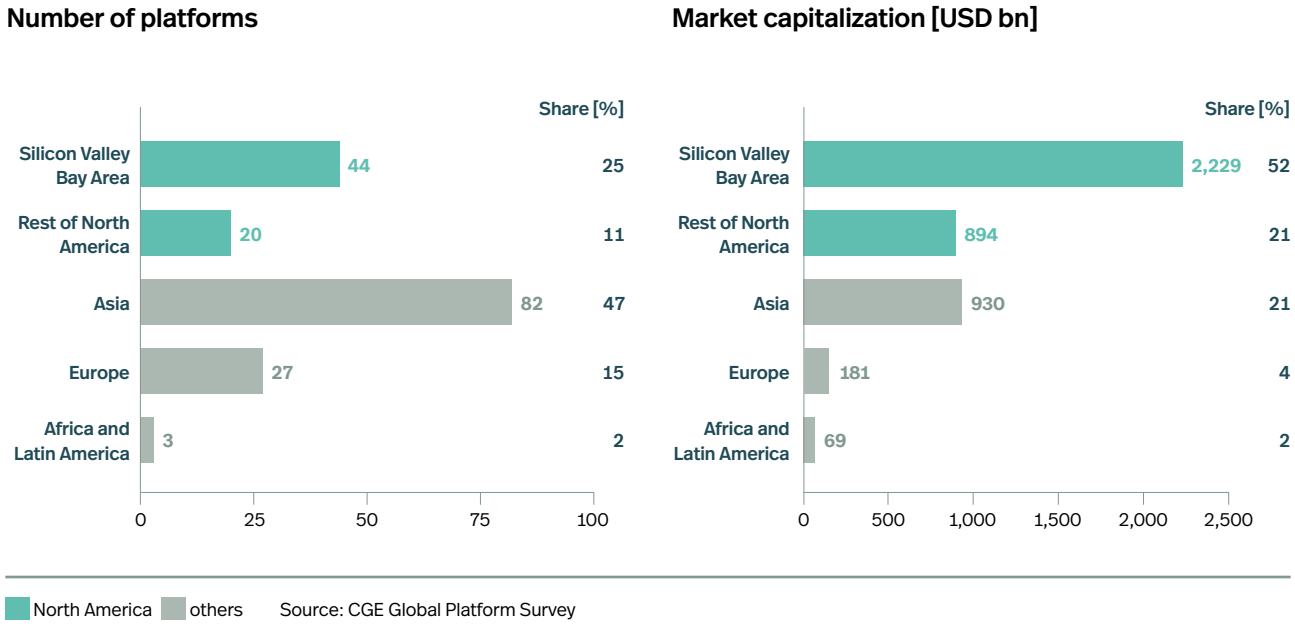
to be a regulatory transgression. Monopolies are seen to be in a position to block innovation and make resource allocation less efficient. In other words, they are considered to be diametrically opposed to a dynamic, growth-oriented Internet economy.

In light of this situation, the European Commission has, as part of a public consultation process, formulated initial lead concepts to promote competition in the field of digital platforms. Its ideas include:

- Legal consistency (i.e. harmonized legal prescriptions for comparable services in conjunction with a trend toward fewer regulations)
- An obligation to act responsibly and protect core values (e.g. a code of conduct on dealing with hate speech)
- Strengthening the basis of trust (e.g. by combating misleading ratings, raising transparency and engendering fair business practices)
- Open markets for a data-driven economy (e.g. by improving data portability)

H Global imbalance: North American companies account for nearly three quarters of the market value of digital platforms

Geographic comparison of the number and value of platforms [2015]



Source: CGE Global Platform Survey

- An innovation-friendly climate (e.g. using feedback from companies and service providers that interact with digital platforms)

The current status of the discussion in Europe and the US can be summed up in the following target scenario:

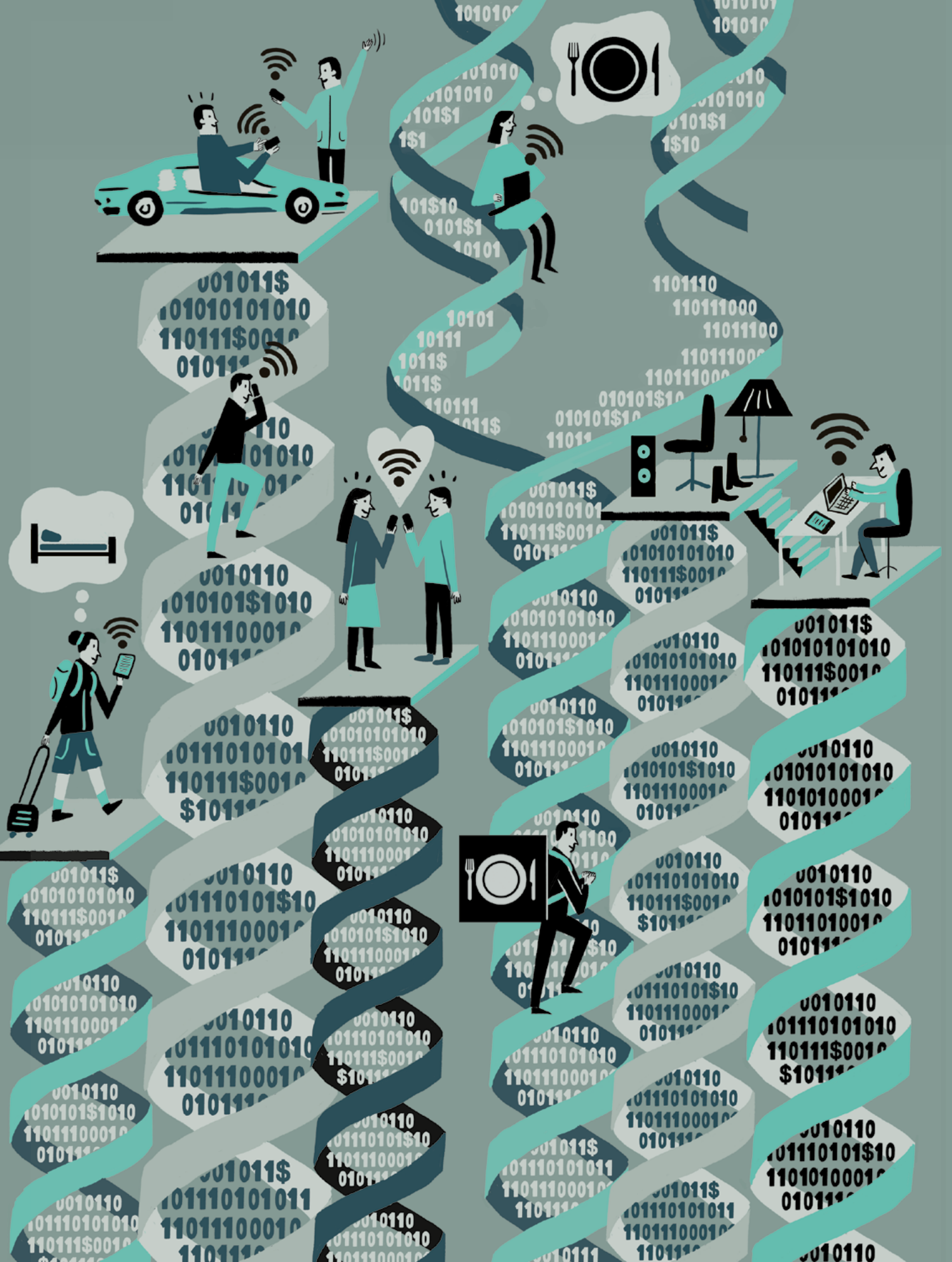
→ ***We need an Internet economy that is strong on innovation and adds substantial value, where fair competition prevails, data is handled in a trustworthy manner and companies act responsibly.***

Central to this scenario is the requirement to keep markets open. Why? Because only an open and fiercely competitive Internet economy will be an innovative one that generates powerful economic dynamism from which broad swathes of society will benefit.

The issue at stake is creating the right framework for innovation that increases public welfare. Platforms should be able to spring up and grow with as much freedom as possible from barriers to market entry. Businesses and other organizations should be enabled to make extensive use of anonymized data from Internet interactions and, from this, to develop competitive business models and/or ideas to serve the common good (in the healthcare sector, for example).

To leverage this potential, it is first necessary to consistently apply and enforce the rules of competition that already exist. Beyond that, existing provisions must also be expanded and – in the amended version of the German Act Against Restraints of Competition (GWB), for example – brought into line with the special challenges presented by the platform economy. Where it makes sense to take specific actions to boost competition and how these actions can be implemented in practice is discussed below. Before that, however, we need to thoroughly understand the business models operated by digital platforms.

Only an open and fiercely competitive Internet economy will be an innovative one that generates powerful economic dynamism.



GENETIC CODE: HOW DIGITAL PLATFORMS WORK

We still understand too little of what digital platforms are in essence, what strategies they pursue and how they impact other players. Yet it is vital to analyze and “crack the code” of this phenomenon.

No one disputes the triumphal march of digital platforms. That said, vigorous academic and political debate certainly does surround the factors behind this unstoppable advance. One thing is clear: Unlike many product families or technical systems, which are also frequently described as "platforms", digital platforms possess certain distinctive properties that give them their unique value. But what are those properties?

Merely defining and delineating what digital platforms are is no easy matter. Here, for example, are five definitions whose focus and scope reflect obvious differences:

- The Green Paper published by the German Federal Ministry for Economic Affairs defines platforms as Internet-based services that draw attention to content through aggregation, selection and presentation.
- The German Monopolies Commission speaks of intermediaries that bring different user groups together, enabling them to engage in economic or social interaction.
- Germany's independent competition authority sees platforms as companies that act as intermediaries, facilitating direct interaction between two or more users between whom indirect network effects exist.
- The European Commission describes (online) platforms as an undertaking operating in two (or multi)-sided markets, which uses the Internet to enable interactions between two or more distinct but interdependent groups of users so as to generate value for at least one of the groups.
- One scientific definition, put forward by Parker/Van Alstyne/Choudary, is this: "A platform is fundamentally an infrastructure designed to facilitate interactions among producers and consumers of value."

In practice, digital platforms do indeed take on all kinds of different forms. They include environments for software engineering and distribution (especially app stores), search engines, mapping services, marketplaces and trading platforms (especially aggregators and brokers), catalogs and directories, auction and payment systems, comparison and rating portals, media and content services, online games, social networks, partner or dating agencies, communication services, collaboration tools (especially wikis), sharing tools (in the "sharing economy"), tools to bundle demand ("collective buying") and, in the wider sense, even operating systems and browsers, for example.

Digital platforms are a flexible concept which, not least due to the rapid pace of change in markets and technologies, is constantly evolving and developing. This too makes it difficult to attempt a definition or legal approximation. Ultimately, however, the abstract status of a digital platform is less important to analysis of its economic impact than its concrete activities. Accordingly, the section below identifies seven common denominators that together describe the core of the platform phenomenon.

1. Characteristics

We see seven characteristic attributes that describe the essence of digital platforms: They serve as network nodes, matchmakers, market makers, value creators, rule setters, risk managers and data processors.

Network nodes

The first essential characteristic is less trivial than it might at first appear: Digital platforms are Internet players that operate as central nodes ("Internet hubs") in the public network. This distinguishes them from commodity exchanges and trading hubs of the kind that have existed since ancient times, as well as from closed systems such as credit cards, fuel cards and online trading. Platform companies are very "tech-savvy" and often also operate cloud services.

Matchmakers

The second characteristic, and the core function of digital platforms in any shape or form, is aligning product or service fit with the identity of interests: "matchmaking", in other words. Unlike conventional networks that serve only a single user group, digital platforms operate in two- or multi-sided markets. They bring user groups together with the aim of giving them access to smooth, direct interactions that add value. These *inter*actions can, but do not have to, result in *trans*actions. If they do so, the platform usually has no control over key transaction variables such as pricing power for a product or the design of contractual terms. A number of hybrid models exist in practice, however. Amazon trades for its own account, positioning itself as a contractual partner, while at the same time operating as a marketplace in which it brokers transactions on behalf of third parties.

The existence of the indirect network effects that accompany matching is crucial to an understanding of their business models. This kind of indirect network effect exists when the value of a service or product increases (positive network effect) or decreases (negative network effect) for one user group when the other user group grows. Indirect networks thus trigger a "ping-pong effect": A marketplace that attracts many potential buyers will also become attractive to sellers (and vice versa). In extreme cases, such indirect network effects lead to a tipping point and, ultimately, to the monopolization of a market. At this point, no other competitor can achieve the critical mass needed to be able to operate as a matchmaker.

Indirect network effects can also have an asymmetric effect. Too much advertising on a content platform acts as a deterrent to readers, for example. This interdependency creates a situation in which, especially with regard to pricing, platforms must always keep a close eye on both sides. It can make perfect market-economic sense to subsidize one side (e.g. by providing free products) in order to indirectly make the platform more attractive to the other side of the market. Either way, the goal must be to strike the ideal balance between the interests of all relevant user groups.

To fulfill their function as an intermediary between distinguishable but interrelated user groups, platforms need to generate both attention and concrete benefits

on both sides of the market. If they fail to do so, neither the supply nor the demand side will be willing to commit to the up-front investment of participating in the platform. The result is heavy marketing expenditure in the start-up (or "audience-building") phase. At the same time, the benefits must be sufficiently large to satisfy the value creation expectations of all participants, and of the platform itself. If these expectations are not (or no longer) met, network effects can also work in the opposite direction, triggering a downward spiral of defecting users that is difficult to halt.

Market makers

Third, digital platforms are market makers. They aggregate information on a large scale (big data) and, for their own business purposes, create a central market that often transcends the traditional lines between industries. Sometimes, this market even allows players to switch sides, i.e. for suppliers to become demanders and demanders suppliers. This is the case with Etsy and eBay, for example. Small and medium-sized enterprises in particular benefit from markets built by information aggregation, as do less well-informed market players whose above-average transaction costs (*ex ante* and *ex post*) are drastically reduced by participating in a central trading platform.

Here are just a few examples of the efficiency of (multi-sided) markets created by platforms:

- Facebook has created a global marketplace for social interaction. It facilitates fast, uncomplicated and authentic interaction between users who would otherwise never have come into contact with each other.
- At the same time, Facebook has successfully added new market sides (such as advertising and development) to its business model, thus forging positive links between ever more groups of users.
- Uber's dynamic dispatch algorithms not only shorten wait times for passengers but also reduce empty rides for drivers – a win-win situation.
- eBay seems to find a buyer for even the most unusual products. Some of these are second-hand goods that, despite still being fully functional and ready to use, would otherwise have landed in the trash.
- Online-focused dealers such as Amazon have very low transaction costs and, as intermediaries, do not even have to keep products in stock themselves. This allows them to offer a very much wider assortment than their (largely stationary) competitors.
- The benefit of low transaction costs and a broad range of offerings is especially true of purely digital products, such as those in Apple's and Google's app stores. In this context, even niche portfolios can make a major contribution to business success by means of what are known as "long tails" (where sales revenue is distributed across more products).

In many cases, digital platforms create markets where none existed before. Indeed, they serve as a necessary corrective to market failure, or at least to market barriers, by overcoming frictions such as the lack of fluidity in a niche market, by bringing widely dispersed market players together, and by solving what is known as the collective action problem, which occurs whenever the two sides cannot agree to a binding transaction standard.

To create a fluid market, however, platforms must also resolve the chicken-and-egg dilemma: Without supply there is no demand, and vice versa. To overcome this hurdle, platforms are recommended to adopt as many as eight different market entry strategies ranging from seeding to a big bang. →I Smooth, uncomplicated, barrier-free access for interested parties puts in place the basic conditions for the success of these strategies. An influx of new market participants is thus achieved by pull effects rather than by traditional marketing push strategies. As soon as a platform is sufficiently well known, users come of their own accord because of the attractive value proposition and its viral dissemination.

Alongside fluidity, another obstacle is how to monetize the market once it has been created. To set the ball rolling and achieve the necessary critical mass, platforms frequently sell their products and services for less than their marginal cost. On occasion, products are even given away – sometimes temporarily, but often on a permanent basis in order to subsidize more price-sensitive or more critical market participants. Essentially, the product that platforms offer is access to a target group. It follows that monetization options (other than advertising revenue alone) can be limited, in particular once one side of the market has become accustomed to getting things for free. What are known as "freemium" models, which offer a fee-based upgrade to a free basic product or service, do not work in every market.

Once critical mass has been reached and if the indirect network effects continue to work in the form of self-reinforcing feedback loops, there is the danger of monopolization as the biggest platform ultimately absorbs (virtually) all market players into itself. This tipping point can increase public welfare because it is more efficient to use just one platform than five different ones. From the perspective of competition law, however, there are concerns about this kind of development: The resultant "competitive bottlenecks" are prone to abusing their market power. If worst comes to worst, a market can become foreclosed because the barriers to entry are too high. Alternative platforms are scarcely able to fulfill the function of a market maker, even if they possess considerable innovative potential.

It is true that digital platforms experience considerable churn: Temporary monopolies are replaced by new ones. However, as data becomes increasingly concentrated as a result of verticalization and platform integration (see the sections that follow), it is impossible to rule out the emergence of more durable monopolies. Given the powerful and positive impact that establishing and penatrating a market has on welfare, it is imperative to prevent the foreclosure of markets.

Value creators

Digital platforms empower their users to engage in value-added activities that, if the platforms did not exist, would not happen at all, or at least not with the same level of efficiency or quality. First, they operate a very closely organized core interaction: Tinder, for example, perfects this interaction by reducing matching to a simple swipe. All key resources are primarily placed at the disposal of this one process. In some cases, the core is extended into new forms of value creation and thus gener-

Eight market entry strategies for digital platforms

I

To establish themselves on the market, digital platforms must solve the chicken-and-egg dilemma: No supply without demand, and vice versa. Eight strategies have proven their worth.

1. Follow the rabbit
Prove that the business model works in a one-sided market to begin with (Amazon Marketplace).

2. Piggybacking
Assimilate the user base from another platform (PayPal payment solution for eBay).

3. Seeding
Create relevant value units in advance to convince users and stoke up the market (pioneer applications in the Google Play Store).

4. Marquee
Incentivize the participation of particularly important users (influencers on LinkedIn).

5. Single-side
Start by concentrating acquisition on one side of the market/one user group (OpenTable reservation system).

6. Producer evangelism
Enable the supply side to contribute its own customer base (auction process at Mercateo).

7. Big bang
Leverage push marketing to maximize attention on the opening day/during the start-up phase (Twitter party at the SXSW festival).

8. Micromarket
Begin by becoming established in an existing community (Facebook at Harvard).

Source: Geoffrey Parker/Marshall Van Alstyne/Sangeet Choudary: Platform revolution, New York 2016

ates additional value units. For example, Uber now complements its ride exchange activities with a ride sharing service to further cut costs. Trading platforms like Amazon and Zalando offer their business partners numerous add-on services, from targeting to delivery service.

Platforms often further enhance their role as both B2C and B2B value creators and process catalysts by adding extra services, tools and infrastructure activities. These add-ons are designed to give users and partners as rich and convenient an interactive experience as possible (as well as generating additional data, of course). These spin-offs include payment systems, clearing processes and collaboration tools for user-generated content. Some platforms go so far as to provide entire development environments for crowd-based innovation (i.e. the development or improvement of products by consumers). Their aim is not only to acquire users and partners, but also to activate them by enabling and encouraging value-added interaction. This in turn maximizes the efficiency and breadth of choice in a process that benefits and enriches all parties concerned.

Rule setters

Digital platforms are also rule setters. Networks must be nurtured and updated permanently, because the attractiveness of a platform is above all the result of the structure of its user groups and the relevance of its content. The law of deterioration applies: Uncontrolled growth leads to a degenerative effect, causing quality to decline and the value of interactions to decrease. This too prompts a feedback cycle – a negative one in this case – because quality-sensitive users are the first to withdraw in response to bad experiences. What is needed, therefore, is a governance mechanism that sustains the value of interactions and protects the quality of the network.

In some cases, a platform must actively restrict access in order to maintain its value for all user groups. A significant excess of male over female users on a partner or dating agency platform, for example, prompts attractive women in particular to leave these platforms because the matches they receive are not worthwhile. This triggers a negative spiral. A platform that wants to avoid such issues must therefore define access rights, as well as spelling out codes of conduct, conflict-solving mechanisms and sanctions in the event that its rules are violated.

The most important countermeasure to prevent negative externalities as a result of inappropriate behavior is to actively filter or curate the platform. This involves rule-based management of the flow of information, which is handled by algorithms (by software), editing (by hand), users themselves and/or multiple systems running simultaneously. To reinforce the verification of compliance with norms, many platforms apply non-monetary currencies to their interactions: attention, popularity, influence and reputation are often more powerful motivators for users than financial considerations. They create a strong incentive to adhere to socially desirable behaviors.

There is an inherent tension between this form of control and openness as a constitutive element of digital platforms. However, not every link in a network chain is of genuine relevance. An effective governance mech-

anism that, like a community leader, urges participants to be sociable does not fundamentally conflict with the openness of a platform. Transparency, participation and fairness have proven to be the most important rules for digital platforms. If these rules are complied with, there is no reason to fear a creeping deterioration in the quality of either the network or its interactions.

Depending on how important different users are to the platform, it may make sense to vary the standards applied. "Crowd curation" often takes the form of review, rating and reputation systems and is a very reliable way to ensure that interactions meet a minimum quality level. The negative effective from a competitive perspective, however, is that these mechanisms also generate a powerful lock-in effect, because users cannot take their ratings with them to other platforms.

Risk managers

The sixth characteristic feature is that digital platforms act as risk managers. On the one hand, reviews and ratings create a strong incentive for socially acceptable behavior. At the same time, they are also a powerful tool to reduce risk. Many transactions – taking rides with complete strangers or buying products from unknown merchants, for example – would never take place without this kind of system. Effective risk reduction – even providing expensive safety nets such as capping losses in the event of fraud, in some cases – can inject so much dynamism into a market that the associated costs are easily recouped.

For platforms such as Amazon, eBay, Airbnb and Uber, it is vital to resolve the problem of trust. Once user groups begin to distrust each other – due to manipulated ratings, for example – the marketplace is doomed. Every participant wants to know: Who am I dealing with (identity)? And what should I think of them (reputation)? Transaction risks are only sufficiently manageable if reliable answers are provided to both questions. Yet getting market players to rate each other is not only extremely cost-efficient, but is often also much more conclusive than sourcing ratings with professional service providers such as credit agencies.

Purchase recommendations based on the customer's history ("collaborative filtering") are another useful risk reduction mechanism on digital platforms. These recommendations are often expressed in forms such as "Other customers also bought ..." or "You might like this as well". At least subjectively, these cross-references too help mitigate the risk of making a wrong purchase decision. At the same time, they provide an added lever with which to guide customers' behavior.

Data processors

Lastly, digital platforms also process data. They evaluate information from numerous sources, set it in relation to each other and, from the resultant data analysis, gain new insights about user behavior and customer preferences, for example. This leads to superior service, greater personalization and a more relevant assortment of offerings. Some of the most frequently gathered data includes sociodemographic attributes, IP addresses, clickstreams (the order in which pages are viewed), reaction and behavioral patterns, locations and movement profiles (geotracking). This data is processed at

least as a by-product, although it constitutes the actual business purpose for platforms financed primarily by advertising.

Digital platforms need vast data aggregation and information processing capacity to capture, structure and analyze all this data. The stronger their data analysis capabilities, the more relevant will be the information they exchange on the platform and the more valuable matches will be to users. A large data pool combined with powerful analysis capabilities creates a dual information asymmetry: Platforms know more than their customers (even about the latter's personal preferences). And platforms with a richer selection of data can apply better filters. They are thus far superior to competitors with less extensive data. Moreover, because the data analysis learning curve is a steep one, the distance between the market leader and the pursuers tends to grow ever larger. This too has implications with regard to competition.

→ ***To summarize: Digital platforms are a transformative concept that is changing the world of business and, with it, our whole society. Their business models rest on the ability to use technology that adds value and is focused on the customer, to match user groups whose interests coincide, to create new markets with sufficient fluidity, to enable and motivate users to engage in active participation, to establish effective rules for positive interaction, to manage and contain the risks to users, and to analyze data in such a way that matching and transactions can be improved continually. Although not all of these characteristics are always there to the same extent, in their totality they are essential to the core of digital platforms.***

Digital platform business models thus reflect a number of peculiarities that must be borne in mind with regard to the possibility of new rules of competition:

- Digital platforms need to reach critical mass (a minimum scale of entry) if they are to be able to operate on the market.
- To become and stay competitive, they require a sufficiently large data pool as their raw material.
- Platforms depend on the use of network technologies.
- All sides of the market are interdependent and must be seen in relation to each other, especially with a view to pricing.
- Digital platforms must enrich their core processes if they are to add value.
- They need rules that could come into conflict with the principle of maximum openness.
- They need to know their users well in order to successfully reduce risks.

Digital platforms' most important asset is their network. All their economic activity is focused on protecting this network – against degeneration, against loss of relevance, but also against hostile takeover by rival players. This being the case, let us now turn our attention to the specific business practices that are of relevance to competition surrounding digital platforms.

2. Patterns of competition

Digital platforms reveal recurrent patterns of competition involving some controversial business practices. These include crowdsourcing, deconstruction, asymmetric pricing, market narrowing, verticalization and the formation of ecosystems. →J

Crowdsourcing as a method of innovation

At the heart of the management revolution sparked by digital platforms is a shift of focus away from managing internal resources and toward the coordination of external networks. The practice of turning companies inside-out in this way has, tellingly, been dubbed "inverting the firm" (Parker/Van Alstyne/Choudary).

It is hard to overstate the consequences of this shift in the focus of organizational activity, because they add up to a critical competitive advantage. Digital platforms can accumulate a more or less infinitely scalable pool of contributors and idea generators, thereby giving themselves access to virtually unlimited resources. The option of "side switching" makes every single user a potential producer, reviewer and innovator! Powered by crowdsourcing, this reconfiguration of value chains makes platforms tremendously dynamic: No publisher of encyclopedias can keep up with the productivity of Wikipedia, and no travel guide is ever as up-to-date as TripAdvisor.

There is a downside to the model of external production and innovation, however. Quality problems can be contained by filtering and curation. The real challenge when involving externals via open interfaces is of more than a mere technical nature. A certain loss of controllability is unavoidable and must be accepted as a given, because digital platforms' key resources lie beyond the platform company's own boundaries. Strategy and development processes can only be planned to a limited extent; "emergent" innovation happens in their place. At the same time, value chains threaten to become fragmented, and the issue of fair share – compensation for the value added by externals – must be addressed.

To try to mitigate their loss of control, digital platforms protect their access to essential assets such as fees, licenses, patents and data itself. This desire to control core processes is one reason for Apple's bitter dispute with Spotify about the legality of commission fees on in-app purchases. →K

Deconstruction and reintermediation as a strategic concept

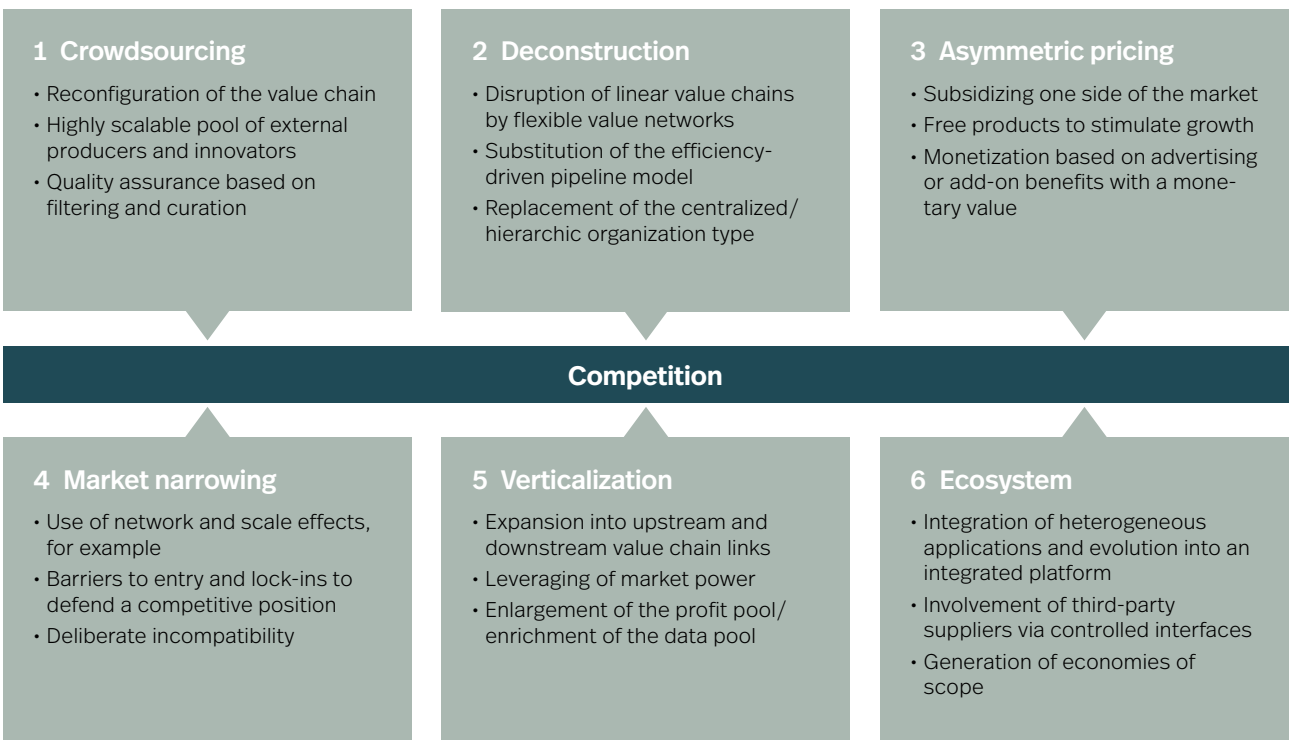
Linear value chains are a characteristic feature of vertically integrated companies. By insourcing upstream and downstream production stages, they attempt to safeguard access to resources, minimize transaction costs and realize economies of scale. Yet the digitization of ever more processes is removing some of the justification for linear vertical integration. One reason is that dependency on resources is diminishing. Another is that dwindling marginal costs are making supply-side scale effects less important (although they remain very important on the demand side).

Digital platforms take advantage of this circumstance by fragmenting and disrupting linear value chains.

They replace efficiency-driven pipeline models with flexible, adaptive networks. This process of deconstruction is calling into question the lines between industries, pricing structures and inherited customer and supplier relationships. At the same time, it is minimizing transaction costs and thus boosting welfare. Inefficient gatekeepers of economic processes are disappearing from the market as they are substituted by highly scalable, high-tech platforms that are less capital-intensive.

J Winning strategies: Platforms typically activate six levers to establish an advantageous market position for themselves

Patterns of competition adopted by digital players



Source: Roland Berger

What is a “fair share” when trading via digital platforms?

K

Distribution wars: Apple is engaged in long-running disputes with Spotify and Amazon over the share of value added – and of profits.

The business model

Apple normally pockets a commission of 30% on all sales via its proprietary App Store. At the same time, the company prohibits all app developers from referring their customers to alternative sales channels for add-on offerings that can be bought from within their program. In some cases, Apple makes money several times over: by selling the app itself (where this is not free), and by netting another 30% cut on revenue from all in-app purchases.

The case of Spotify

Until recently, subscriptions to the Swedish music streaming service made via the corresponding iOS app cost exactly the 30% more than on the Spotify website that Apple took as its commission. Spotify appeals to users of the latest version of its iOS app to buy straight from the Spotify website in order to bypass this markup. Recently, the Swedish firm even went so far as to deactivate the payment function in its iOS app. Apple has since blocked the Spotify app, arguing that it violates the App Store guidelines. Conversely, Spotify accuses Apple of using its App Store as a “weapon” to prevent competitive offerings (Apple operates its own music streaming service under the name Apple Music).

The case of Amazon

When books are ordered via iPhones or iPads, Amazon likewise seeks to side-step Apple’s 30% sales commission business model. iOS users can read books and obtain sample extracts via their Kindle app, but cannot buy books from this app. (This can be done only via Apple’s rival iBooks app.)

The real significance of these cases

Both Spotify and Amazon accuse Apple of distorting competition. They argue that Apple, an operator of its own services (Apple Music and iBooks), is creaming revenue off its rivals and, in so doing, is preventing free and fair competition. Advocates of the Apple position point out that selling private labels that compete directly with other brands and products is common practice in offline retail. Opponents of this policy assert that Apple sells digital products at a marginal cost of virtually zero while pocketing an exorbitantly high commission fee that it can demand only on account of a global duopoly situation.

The latter assume the role of a new intermediary, in particular integrating small, agile producers and service providers in their value chains. The linear and comparatively rigid value chains of the past that could only be optimized gradually are thus giving way to flexible value-added networks. As a result, digital platforms are already facilitating innovative business models in industries such as media, retail and travel. In the future, the phenomenon will also spread to cars, energy, finance, education and healthcare. →L

While all this is happening, the deconstruction of linear value chains is shaking the very foundations of the central/hierarchic organizational paradigm and its functional structure. Joined-up thinking and customer centricity are taking departmental silos out of the equation. Corporate boundaries are becoming permeable. Physical assets are seeing their importance erode – as are traditional strategic concepts that seek primarily to safeguard essential resources and inimitable capabilities ("resource-based view"), or that aim to conquer and defend a sustainable competitive position ("market-based view").

The pattern of deconstruction likewise raises questions about competition, one of them being how to delimit the relevant market, another being how to ensure fair access to the infrastructures, information and resources that are crucial to a business process.

Asymmetric pricing to stimulate growth

Rapid growth is the lifeblood of digital platforms. Companies that fail to achieve critical mass disappear from the market again, even if their business model harbors tremendous innovation potential. To be able to realize such rapid growth, some platforms initially concentrate on one side of the market. In the case of transaction platforms, this is often the demand side, because at least some measure of commercial interest in participation can be taken as a given on the supply side.

To be attractive to as many users as possible on the demand side, digital platforms frequently set prices lower than the marginal cost for their products and services. In two-sided markets, such behavior can make sound market-economic sense as long as monetization takes place on the other side, e.g. through the sale of advertising slots. In effect, one side of the market is subsidized at the expense of the other.

There are natural limits to this counterintuitive yet still perfectly rational behavior, however. The interests of both groups of users must be balanced to ensure that no negative externalities occur. That could, for example, happen if one user group felt it was being taken advantage of.

Ultimately, it should be noted that setting prices is much more complex in multi-sided markets than in markets with one side only, and that it can be eminently sensible – especially in the start-up phase – to subsidize user groups. This consideration must be factored into any assessment whether pricing complies with the rules of competition. However, it still leaves us with the question of whether loss leaders and more controversial methods of customer acquisition (such as the invitations to friends sent automatically by Facebook) are in fact admissible.

Narrowing the market to protect a competitive position

According to strategy guru Michael Porter, every company strives to avoid the ups and downs of economic dynamics as far as possible by adopting a competitive position that is hard to attack (in what are known as generic competitive strategies). This approach is legitimate as long as it does not lead to market foreclosure, i.e. where a monopolist prevents innovation-based competition in a market by raising extremely high barriers to entry.

When operating generic competitive strategies, digital platforms benefit from the fact that indirect network effects are powerfully self-reinforcing: More users on one side attract more users on the other side too. Moreover, a constantly growing data pool drives a steep learning curve (through scale effects), thereby increasing the chances of improving the product and service portfolio on offer. In extreme cases, a market can move very rapidly toward monopolization with only one player ultimately attaining critical mass.

This narrowing of the market is critical from a competition perspective, but it is encouraged by the business practices of some digital platforms (though some of these practices are already banned in certain EU countries):

- "Shoot-out acquisitions", i.e. buying companies with the aim of eliminating potential competitors at an early stage.
- Price parity and "most-favored" clauses, which guarantee a platform the best price or the most attractive terms (thereby putting rivals at a disadvantage).
- Exclusivity agreements that keep partner firms from doing business with competitors.
- Deliberate strategies of incompatibility that prevent users from switching to alternative products, with technology keeping them locked into a closed system.

Aside from network and scale effects and the business practices just mentioned, there are also factors that operate in the opposite direction. In particular, they include platform operators' self-imposed limits on the number of users (to avoid negative externalities), the option of multi-homing (i.e. the parallel use of alternative platforms at low cost) and the differentiation of platforms (e.g. by forming niche offerings) based on the substantial heterogeneity of at least one user group.

Alongside these factors, due account must also be taken of the forceful dynamism of digital platforms' business models when assessing their competitive behavior. Given the transience of price and brand effects on the Internet, digital platforms have few other customer retention options than to use network effects to lock in users. Essentially, the only possible way to secure a sustainable competitive position is by foreclosing the market, e.g. due to prohibitively high switching costs.

Here again, the interrelationships are complex: To consolidate their business models, digital platforms apply a growth logic that can be strenghtened by abusive business practices in a way that is harmful to competition.

Verticalization to enlarge the profit pool

Once digital platforms have established themselves as

Who's next? The step-by-step disruption of the "old economy"

L

Which sectors could be next in line for the platform revolution

Status quo

"Platformization" has already taken hold of the media, advertising, retail, travel and hospitality industries. Automotive engineering is poised to experience a similar transformation. By contrast, the impact of the platform revolution on the education, healthcare, finance, energy, manufacturing, transportation and agricultural sectors has been limited – so far.

Drivers of disruption

Factors that favor platformization include the importance of information and knowledge, the existence of gatekeepers where little or no scalability is possible, and extensive fragmentation.

Forces against disruption

Factors such as heavy regulation, the cost of failure and resource intensity tend to make industries more resistant to the advance of platformization. To cite just a few examples: The education and healthcare sectors are heavily regulated. The latter is also exposed to high risks in the event of poor matching (e.g. when looking for a doctor). The energy sector and manufacturing are very resource-intensive.

Next in line

The transportation and logistics sector is believed to be the hottest candidate for the next global platform. Uber – nothing more than a ride exchange up to now – is in pole position. The Internet of Things will likewise give rise to network-based global players, provided industry can agree to standards – or provided one player with sufficient market power succeeds in enforcing them. Demand-side pressure is likely to be greatest in the healthcare sector. Here, it is very probable that a fitness/vital functions-themed platform will soon become established (possibly with links to relevant service providers). In the energy sector, the emergence of digital platforms will be fueled by decentralization of the power supply and by smart grids. Experience in the education sector has so far been sobering, with education platforms tending to be used opportunistically. Looking ahead, though, digital platforms could lead to a more varied selection of offerings here too. Forecasts have long heralded the establishment of platforms in the finance industry. To date, however, no provider has succeeded in making the potentially disruptive blockchain technology usable on a large scale. Similarly, the trend toward open data in the public sector could facilitate the development of new platforms.

“Google, Apple, and Amazon deserve to be highly profitable and successful. But the opportunity to compete must remain open for new entrants and smaller competitors that want their chance to change the world again.”

Elizabeth Warren
US Senator

a new intermediary in a value creation process and have achieved critical mass, they regularly try to reach out into upstream and downstream links in the value chain – in other words, to engage in vertical diversification (as well as horizontal diversification in many cases, i.e. moving sideways at the same link in the chain). Alphabet/Google is a classic example of this verticalization strategy: Having started life as a search engine provider, it went on to develop a whole universe of platform applications (including an operating system, browser, mapping, messaging, video streaming, app store etc.) and acquired more than 200 companies.

Alphabet/Google is by no means the only enterprise to tread this path, however. On the contrary, it is following a pattern: Since digital platforms' business model is itself permanently threatened by disruption, vertical diversification is a tried and tested tool not only to protect one's current competitive position at least for a time, but also to assimilate new profit pools. Largely unnoticed by the Western public, Chinese platform operator Tencent has achieved a scale of integration that puts even Alphabet/Google in its shadow. In expanding the WeChat app's range from communication and entertainment to healthcare and e-government, along with plans for links to offline retail and possibly even the introduction of its own operating system, Tencent is well on the way to building an exhaustive infrastructure for the digital world. →M

Market power is normally carried over into vertically or horizontally adjacent areas by introducing a new unit of value which is traded in addition to the ones that already exist on a platform. A large user base can be helpful in this regard, but is no guarantee of success. Digital platforms can also suffer from the dilution and softening of their core interaction, which in turn can cast doubt on overall user acceptance.

Extensive vertical diversification can cause companies to become dependent on an upstream or downstream digital platform.

Verticalization is often also backed by the idea of broadening the company's own data pool and enriching it with information from different links in the value chain. Even where data privacy laws permit such actions in the first place, however, very considerable hurdles must be overcome because greater complexity demands special analytical capabilities if good use is to be made of the additional data.

Again, the impact on competition is ambivalent. On the other hand, diversification is a good way to make market

players more efficient and thus to inject fresh impetus into competition. On the other hand, vertical diversification in particular can cause companies at other links in the value chain to become dependent on an upstream or downstream platform.

Creating an ecosystem to leverage rights of access

Through vertical diversification, digital platforms aim to achieve an infrastructure-like competitive position where popular and/or pivotal applications are integrated in a one-stop shop. In many cases, complementary third-party services then gather around this network and build on the integrated platform.

In a connected world, establishing an ecosystem that brings large groups of users together is the only competitive advantage that is immune to attack in the short term. Such ecosystems are made up of hardware, software, services and content. But user groups – especially third-party developers – and their interactions also belong to them. It is only the sum of multiple factors that makes an ecosystem unique and inimitable.

The crucial difference to the market narrowing and verticalization strategies discussed above, both of which tend more toward protectionism, is that ecosystems are (in part) open to third parties. Externals are integrated in the production and innovation process via application programming interfaces. These APIs facilitate standardized access to core resources, but remain under the control of the platform operator. Ecosystems that do not have such an interface cannot develop the momentum they need.

There is good reason to claim that digital platforms need to become ecosystems if they want to unfold their full potential, because only then does the competitive advantage afforded by external innovation take full effect. To take an example: Apple initially ran its Macintosh platform, the forerunner of iOS, as a closed system. Yet the platform only really took off after it was opened up to third-party developers and created an interoperable development environment. Today, more than 1.5 million different applications can be downloaded from the Apple App Store. (Google's Play Store boasts 1.8 million apps.)

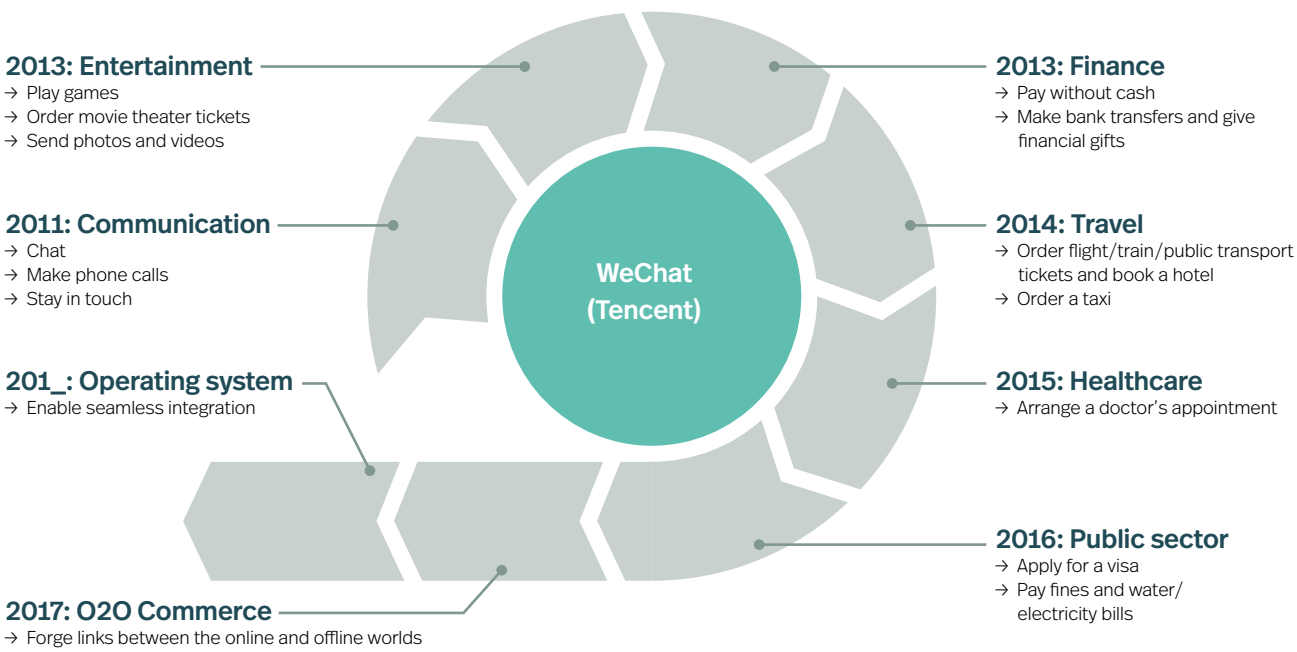
Platform operators that do not take this development leap – and are unable to benefit from the associated advantages of connectivity – regularly fail. Former market leader MySpace, for example, was swept aside by Facebook in 2008 and has now been consigned to a niche existence as a music portal.

Many digital platforms can be seen to open up (in part) over time. They do this when they want to spread their ecosystem wider via controlled interfaces. In principle, however, this openness runs the risk of adding new intermediaries to the equation who occupy aspects of value creation for themselves. This realization explains why the operators of app stores, for example, are so rigorous in insisting on control of the core processes. The trick is to maintain a balance between facilitating innovation and preventing fragmentation. From a competitive perspective, the danger is that the scales may tip toward control, leaving no guarantee of open access. Platforms regularly reserve rights of access for themselves, as in the current case of Apple versus Spotify.

Our overview of the patterns of competition adopted by digital platforms makes one thing clear: It is easier to understand many modes of behavior when one considers the platforms' business models. However, even legitimate goals can be pursued by unfair means. The section below therefore addresses the following question: How can a clear distinction be drawn between normal competitive strategies and both system-driven and environment-driven practices on the one hand, and unfair business practices and the abuse of a market-dominating position on the other hand?

M One-stop shopping: Digital platforms' ecosystems are increasingly spreading into adjacent segments

Horizontal and vertical diversification based on the example of Tencent



Source: Roland Berger

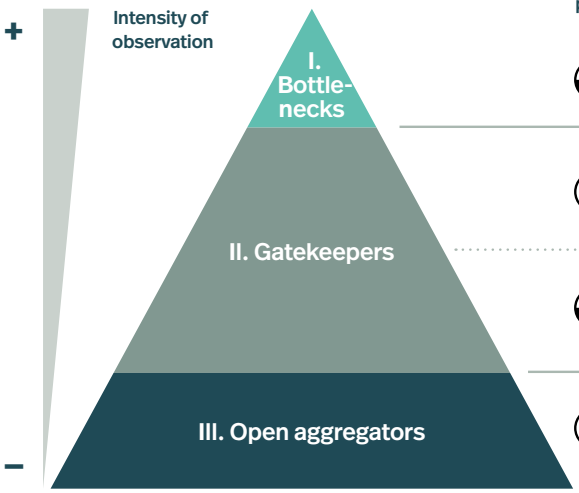
3. Market power and systemic importance

Analysis of the market position of digital platforms and how they work has shown that conventional perspectives are of only limited use when assessing their competitive behavior. The business models of digital platforms differ from those of traditional companies in a number of material ways. It follows that the existence of abusive practices must therefore – at least to some extent – be measured by different yardsticks.

In developing these yardsticks, we refer the reader back to our analysis of customers' information-gathering and decision process in volume I, "Going digital". This publication makes a distinction between three main process steps in digital industries: the choice of an access path and, hence, of an infrastructure; the way routine tasks

N Regulatory requirements: The need to act on competition rules grows as platforms' market power and systemic importance increases

Digital competition framework



Market power	Systemic importance	Platform types (2016)	Required market behavior	Need for action: Application of law	Need for action: Legislation
◕	◕	Platforms that effectively serve as infrastructures	Neutrality	☑	☑
◔	◕	Start-up platforms of systemic importance	Openness	☐	☑
◕	◔	Platforms with a portal function	Objectivity	☑	☐
◔	◔	Platforms operating as brokers or service providers	Compliance	☐	☐

Source: Roland Berger

are dealt with; and the way specific needs are met. Going forward, the possibility of B2B or even B2C interaction via the Internet of Things could be added as a fourth step.

If the same logic is applied to digital platforms, the result is a hierarchic typology that gives an indication of market power and systemic importance. →N Platforms that effectively serve as infrastructures – such as app stores – and that lay the foundation for many manifestations of the Internet today are at the top of the pile. They are followed by platforms with a portal function that juxtapose a highly diverse array of information and services, some of which are provided by the operator itself and some by partner companies (e.g. via a bundling function such as that used by social networks). At the bottom end of the scale come platforms that operate on the market as open aggregators across a wide range of offerings and, in many case, even industries. These platforms provide services such as those of agents or brokers, or generate attention by posting news, blogs and videos, for example. As things stand, the Internet of Things is of little significance from the perspective of competition law. Looking ahead, however, it has the potential (in the event of extensive standardization, for instance) to ultimately be assigned to the "infrastructure" category.

Literature on the subject documents a series of typologies that differ from the one shown here. Examples include:

- A functional distinction between market makers, audience builders and demand coordinators, which aims to highlight economic importance and the nature of value creation.
- Differentiation based on the form of interaction: Matching platforms bring user groups together for direct interaction. Transaction platforms are matching platforms that serve a specific transaction. Lastly, attention platforms primarily seek to generate reach.
- A purpose-oriented classification which distinguishes between exchange platforms that focus on achieving 1:1 matches (e.g. product and service platforms, social networks) and maker platforms that address a very large target group on one side of the market (e.g. content and streaming platforms). The primary focus here is on the use aspect.
- Distinctions based on the business model: Subscription models pay their way through participation fees and members' fees; access models monetize access to target groups; and advertisement models are funded by advertising revenue.

Nevertheless, these distinctions do little to answer the key question of when platforms assume a gatekeeping function that correlates to substantial market power and the potential abuse thereof. Nor do they answer the question of whether systemic importance gives them the potential to become a competitive bottleneck to an industry or economic system. Considerable systemic importance creates the risk that market entry may be made difficult or even impossible for up-and-coming competitors.

Key areas in which this special status can be of exceptional significance include integrated platforms, universal platforms, app stores and social logins (tier 1), as well as search engines, advertising allocators and hybrid marketplaces (tier 2). These areas are exposed to a very

serious risk of economic dependency: Companies involved in upstream and downstream value creation processes need access to these platforms and depend on them in order to reach out to customers, for example.

Bottlenecks

Digital platforms that effectively serve as infrastructures are the players in the Internet economy that are the most "hazardous", i.e. prone to abusing their market power. This is all the more true if they integrate additional vertical services from the same company and use their market power and systemic importance to guide and control the behavior of third parties.

Integrated platforms | Platforms that are linked to an operating system, a browser or other services of relevance to daily use (especially where these are preinstalled on the user's device) are of the greatest systemic importance. Sitting at the apex of the value creation pyramid, they generate data every time a user activates their system. Especially where they offer service portfolios on other levels too, the resultant data is extremely extensive. Thanks to large and diverse data pools linked to vast analysis options (cross-referencing) and pronounced learning effects, their information and innovation lead grows constantly over rivals that do not have comparable resources. Integrated platforms also have the option of getting users to globally consent to the analysis of their personal data, with such consents valid for all connected services.

Universal platforms | A special form of integration is made available by universal platforms such as Tencent's WeChat and Alibaba's comprehensive portfolio of services. Although they are (still) dependent on third-party operating systems and browsers, they have nevertheless created a universe of offerings that effectively elevates them to the status of infrastructure. In China, small and medium-sized enterprises in particular depend on Tencent as a distribution platform, with more WeChat profiles created than websites registered every day. It is perfectly feasible that, in Europe and the US too, similar platforms could create their own data cosmos in the same way by bundling communication flows between companies and their customers.

App stores | In the Western hemisphere, the function of a commercial intermediary for digitizable products is assumed by Apple's and Google's app stores. Linked to their respective operating systems (iOS and Android), their platforms constitute a de facto duopoly. No other competitors (BlackBerry, Microsoft, Amazon) play a significant part in the market for mobile application software. As a consequence of this unrestricted competitive position, Apple and Google can afford to charge an overall commission (including other fees) of around 30% to distribute digital products via their platform. After all, developers whose products are not listed on an app store run by one of the two leading platforms are virtually impossible for consumers to find.

Social logins | Social networks such as Facebook, Twitter, Google+ and QQ have created a different kind of infrastructure. Social logins give users a single sign-on capability within which they can move freely even outside the original website or app. Login credentials auto-

matically authenticate and authorize them to use other networks and platforms too. For users, this kind of navigation is extremely convenient: There are no interim hurdles to overcome, and they can complete transactions very easily. In practice, however, every movement by every user in this "network of networks" can then be traced. This kind of tracking allows Facebook – a typical home address – to assemble comprehensive user profiles and observe or even control the use of third-party offerings.

In the context of platforms that effectively serve as infrastructures, anti-competitive behavior primarily takes the form of denial of access, the excessive collection and use of data and constant adjustments to the rules of the game, e.g. for app stores or licenses. One common example: The compulsory preinstallation of essential programs, especially on mobile devices (under the pretext of avoiding fragmentation), is detrimental to innovation and should be prohibited to give users genuine freedom of choice.

→ ***To establish fair competitive conditions at the level of competitive bottlenecks, unrestricted platform neutrality must be guaranteed. In other words, upstream and downstream companies must be treated as equals with regard to the platform's own services and offerings. Only then will users enjoy real freedom of choice. To realize this requirement, action must be taken in the competitive arena – both in the area of legislation and in the application of law.***

Gatekeepers

Level two first comprises platforms of systemic importance during their start-up and growth phase. These include the operators of IoT platforms who currently have little market muscle, but who may well set the standards of tomorrow. They also include players such as Uber whose strategic positioning – in this case in transportation and logistics – may give them a role of systemic importance.

Digital platforms that effectively serve as infrastructures are especially prone to abusing their market power.

→ ***In light of their pivotal position, even platform operators that possess little market power but are of future or potential systemic importance should submit to the requirement for maximum openness, i.e. defining interfaces to other systems in such a way that that they do not indiscriminately narrow markets that are taking shape or even foreclose them to potential market players.***

The second gatekeeper subgroup is very much larger and comprises digital platforms with a portal function. First and foremost, this group includes services that are used daily (or at least very frequently) and whose virtu-

"The Commission should (...) not just keep opening proceedings, but should at some point also bring open proceedings to a conclusion."

Markus Ferber
Chair of the Working Group on Competition Policy
at the European Parliament

ally complete coverage of a user group or portfolio give them very powerful tools to leverage and thus increase their market power.

Search engines | The Google search engine that dominates the European market is a perfect illustration of how complex the impact on competition is at this level. Alphabet's nucleus company is repeatedly accused of manipulating search results – either by tweaking the algorithm itself, or by arbitrarily giving better placements to its own products and/or poorer placements to those of its competitors. Specifically, the European Commission has leveled this accusation at Google regarding the display of search results in the context of shopping. →O European consumer protection organization BEUC contends that Google sorts its search results not on merit or by relevance, but based on commercial interests, thereby harming consumers.

For all this evidence, there are solid arguments against fundamentally new rules of competition for search engines. For one thing, Google does not even need to manipulate the list of search hits: Simply knowing the algorithm is sufficient to modify natural hits and possibly even give precedence to its own services and products. Another consideration is that the blatantly obvious manipulation of hit lists would seriously damage the company's reputation and lead to the rapid exodus of users. This fact curbs any company's propensity to abuse its position.

Even so, search engines in particular serve as a gateway to the Internet and are, from a competition perspective, a platform segment that is both sensitive and of central importance. Careful observation and at least the swift and consistent application of law is therefore imperative.

Advertising allocators | Advertising platforms are today the market-dominating allocators of marketing budgets. Search-based advertising and display advertising have become established as the options of choice and are increasingly converging. Both business models frequently auction off real-time advertising slots, some on the basis of keywords in the search results on the platform's own website/app (e.g. Google AdWords), and others either on a context-sensitive basis or tailored to the given user profile on third-party websites/apps (e.g. Google AdSense). The personalization of advertising is increasing in both models. In some cases, user data is brought together across different devices, browsers and apps. Users benefit (if they so desire) in the form of more relevant advertising. However, an advertising platform with a very extensive range can make itself indispensable to companies that wish to advertise (thereby narrowing the advertising market).

Hybrid marketplaces | E-commerce is another area that merits special attention. Comparison portals and trading platforms are important navigators through the world of goods for sale. They yield very considerable economic benefits, in part by improving market transparency and widening choice, but also by reducing transaction risks (the problem of trust) for customers. On the surface, market entry on the basis of offer differentiation still appears unproblematic, and multi-homing is a factor that reinforces competition and can be used at any

Clever? Or unfair? All eyes on Google

Five years and counting: Chronology of investigations of the market leader by the European Commission and other competition authorities

November 30, 2010

The European Commission resolves to open antitrust proceedings against Google on the suspicion that its search engine gives precedence to the company's own services.

April 15, 2015

The Commission arrives at the provisional view that Google systematically gives precedence to its own price comparison service on its general search result pages. It also expresses the fear that users looking for information do not necessarily find the results that are of most relevance to them. In addition, the Commission investigates three further concerns: the copying of rival companies' web content (a practice known as "scraping"); exclusive advertising; and excessive restrictions on advertising companies. On top of these investigations, the Commission launches proceedings regarding software preinstalled in the Android operating system.

April 20, 2016

The Commission arrives at the provisional view that Google abuses its market-dominating position by imposing restrictions on manufacturers of Android devices and on mobile network operators. Specifically, the Commission accuses the company of the following violations: preinstalling Search and Chrome on devices as a precondition of admission to its app store; hindering competitors' operating systems, in particular Android forks; giving manufacturers and network operators incentives to exclusively preinstall Google Search on devices.

July 14, 2016

The Commission arrives at the provisional view that Google abuses its market-dominating position by systematically giving precedence to its own price comparison service on its general search result pages. Additionally, it arrives at the provisional view that the company also abuses its market-dominating position by artificially limiting third parties' opportunities to display search engine advertising by Google's competitors.

Worldwide proceedings

Other proceedings have been opened against Google or are pending in countries such as South Korea, India, Russia, Canada, the US and Brazil – with varying outcomes. Of the six sets of competition law proceedings completed to date, four were dropped (in some cases subject to prescribed conditions). The other two cases resulted in a judicial intervention and a guilty verdict.

time. On the other hand, the dual role that e-commerce platforms often adopt as aggregators/brokers and merchants/intermediaries can give rise to challenges in the area of competition.

This is true for portals that compare and give ratings to products and services of all kinds. They too serve as a central port of call on the Internet; and they too tend toward heavy market concentration, as well as having the option of both requesting and using a wealth of personal data. They also normally assume the dual role of aggregator and broker. In other words, they do not merely bundle supply and demand, but also position themselves as transaction agents – though some consumer protection bodies feel that this is done without disclosing sufficient information about their activities as brokers and the associated commission fees.

The same principle also applies to a comparable hybrid model where trading platforms simultaneously act as both merchants and intermediaries. This dual role gives rise to the possibility that a platform's own offerings could be treated more favorably than those of the competition. Since they broker products and services on behalf of third parties, they also have the opportunity to observe their partners' markets (revenues, user preferences). This gives hybrid models a competitive advantage that must be taken into account when designing the legal framework.

Aside from these matters, very pronounced market concentration and the resultant aggregation of demand can – as in offline markets – lead to an imbalance of power between brokers/suppliers and merchants/partners. This is especially true of Amazon Prime, an offering with which Amazon is increasingly slotting itself into its partners' value chains and going overboard with verticalization, for example by linking premium delivery service and audio/video streaming.

→ ***At the level of platforms that serve a portal function and occupy a strong market position, genuine fair play demands compliance with the principle of objectivity: Competitors must not be arbitrarily put at a disadvantage and hence discriminated against. This requirement goes hand in hand with high standards of behavioral transparency and consistency. In concrete terms, this means that platforms must disclose the criteria they use to filter and curate information, for example, and that they must apply these criteria consistently. Freedom from discrimination also means that access to a platform must not be blocked for no objective reason (such as illegal content). Essentially, however, these challenges can be mastered by rigorously applying existing competition rules without the need to pass new legislative bills.***

Open aggregators

At the other end of the scale, there are comparatively few competition law worries about platforms that operate purely as brokers or service providers. These include intermediaries that bundle supply and demand in a marketplace without operating a hybrid business model – and are therefore less vulnerable to conflicts of interest – as well as attention and target group platforms that focus essentially on reach. The latter mostly consist of content, messaging and sharing platforms.

→ ***The requirement placed on the market behavior of open aggregators is simply to comply with the law.***

Conclusions

What all three levels have in common is that heavy market concentrations can, in the short term, coincide with the best interests of users. It is more convenient and more efficient to use just one platform than five different ones.

Such concentration gives platforms already on level two considerable market power. Portals with practically exhaustive coverage of at least one side of the market often serve as vertical search engines. These days, for example, it is normal for books to be accessed straight through Amazon's internal search function, because users expect this method to deliver the lowest search costs and the best search results. A similar situation exists for specific forms of social interaction. Some social networks have such an extensive reach and are so well structured that they almost completely cover certain target groups and areas of interest. The result is that anyone who does not have a Facebook account is today excluded from numerous social activities.

Stricter competition law demands are naturally placed on platforms that effectively serve as infrastructures and that are also of considerable systemic importance. There is no way round these platforms, which act as gateways to the connected world. Imagine a multi-day outage of the systems operated by Alphabet/Google and Apple: Around the globe, Internet-based communication – and hence the world's economic and social life, far beyond the purely digital realm – would grind to a halt. This is

Top priority for law enforcement: Fair play – in the form of neutrality, openness, objectivity and compliance – must be upheld if the Internet is not to become a club with restricted access.

one more reason why it is so important to safeguard smooth, fair and secure processes on the Internet.

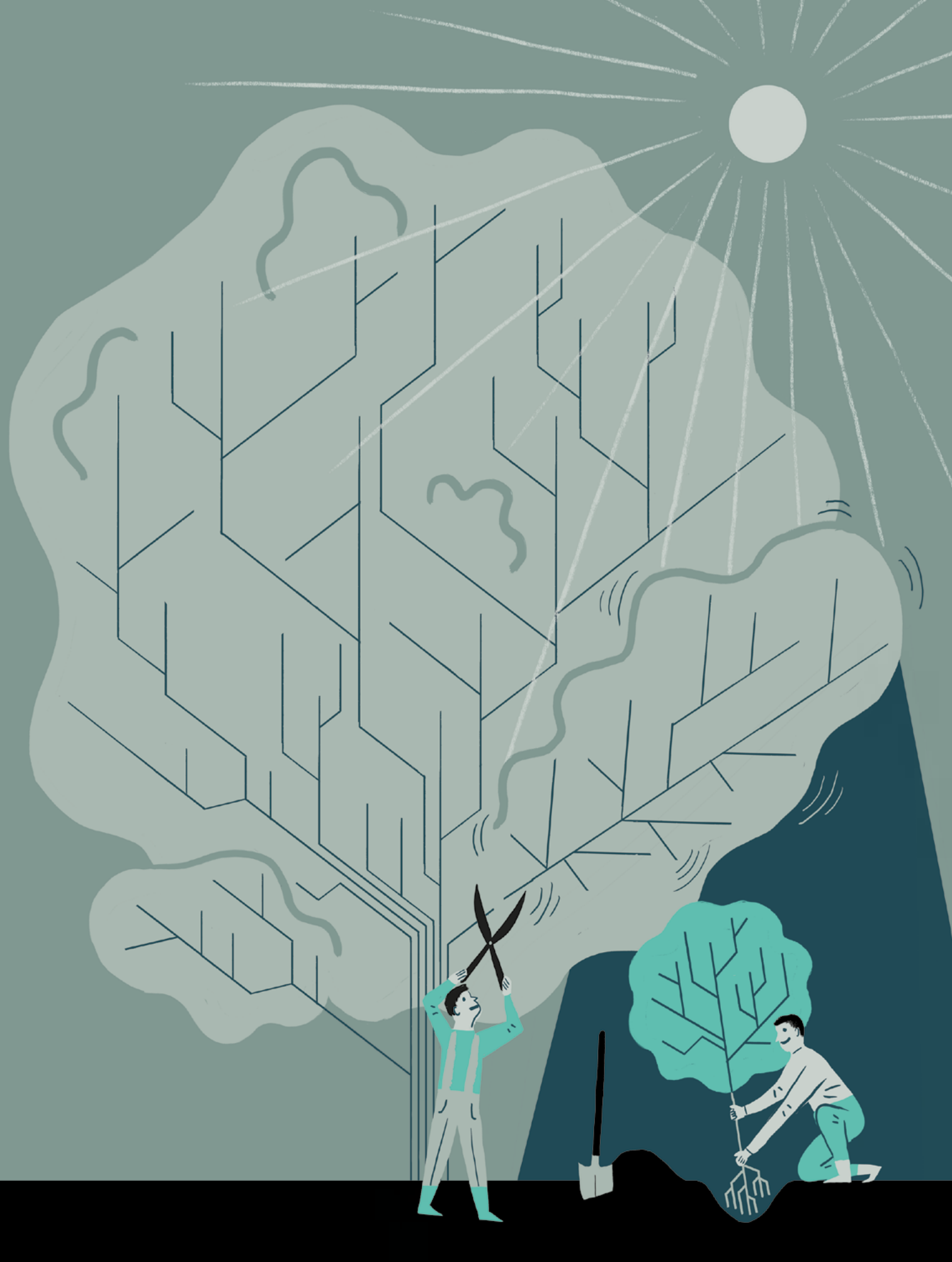
The greatest danger to fair play in the Internet economy, and thus to the realization of the associated innovation potential, emanates from ecosystems – combinations of hardware, software, services, content and user group interactions that sit like spiders at the center of value networks and seamlessly integrate applications and technologies on various levels. Seven such ecosystems exist in the world today:

- Alphabet/Google (Android, Play Store, Chrome, Search, Ads, Maps, YouTube, Android Pay/Google Wallet, Waze, Hangouts, Gmail, Google+, Fiber, Nest etc.)
- Apple (MacOS, iOS, App Store, Safari, iCloud, iTunes, Apple Music, Apple TV, tvOS, Apple Pay, iMessage etc.)
- Facebook (Facebook/Facebook Pages, Connect, Instagram, Messenger/WhatsApp, Oculus, Moves etc.)
- Amazon (Marketplace, Fulfillment, Payments, Web Services, Fire TV, Kindle, Alexa, Prime etc.)
- Microsoft (Windows/Windows 10 Mobile, Explorer, LinkedIn, Skype, Xbox, Exchange, SQL, SharePoint, Visual Studio, .Net Framework, Office suite etc.)
- Tencent (WeChat, QQ, QQ.com, QQmail, QQ Games, QQmusic, Qzone, Traveler, Weibo, SOSO, PaiPai etc.)
- Alibaba (Alibaba.com, AliExpress, Taobao, AliPay etc.)

Other companies are well on the way to joining the ranks of this elite group. Uber is seen as one such candidate for promotion – provided the company successfully makes the transition from ride exchange to network node for autonomous driving.

These ecosystems are largely incompatible with each other. Their operators have thus cornered not only extensive vertical integration for themselves, but also a key position as the "system head" that is difficult to overcome. It is they that control access to the network and thus to users' data. It is they that filter and process information, and that thus determine what becomes visible and what remains hidden. It is they that define the market and make fundamental decisions (about standards, for example). Strategically, this position is so advantageous that more and more pipeline companies too are now trying to set up their own platforms (such as BMW ConnectedDrive). As a rule, however, they have a hard time doing so because, on the Internet, their scale and resource advantages are less significant than their comparative lack of strategic and organizational flexibility.

A position of power that has systemic importance in the digital world brings with it tremendous responsibility. It is imperative that the requirement for fair play in the form of neutrality, openness, objectivity and compliance be upheld if the Internet is not to degenerate into a club with restricted access. In particular, a long and critical look must be taken at deeply verticalized companies that occupy leading positions and operate many additional platforms and services on each of the three levels.



RULES OF THE GAME: HOW TO CREATE MORE COMPETITION

Some of the unique features of platforms go beyond the scope of the current legal framework. Genuine fair play in the digital arena requires the more effective application of existing law, but also new rules and inquiry processes.

Digital platforms are contingent on two things: They need to have fertile soil in which to take root, grow and flourish. And they also need clear, fair and enforceable rules to ensure that the most innovative providers can establish themselves on the market and make good use of their potential to add value.

This section outlines a program of action that meets both of these needs. Not every aspect of the program can be implemented on the basis of existing law. Especially in the case of platforms that practically serve as infrastructures, the effective application of law must be flanked by new legislation in order to avoid damage to the fabric of competition. When introducing new rules of competition, it is important to make provision for all the peculiarities of digital platform business models where traditional concepts of economic competition miss the mark and must therefore be examined to bring them into line with today's requirements. We will explore these peculiarities – such as the compulsion to scale up ("minimum scale of entry") and the need for rapid growth ("go big or go home") – in light of the legal framework that is in place today.

1. Existing legal framework

At the supranational level, the legal framework within which digital platforms operate today is essentially defined by the Treaty on the Functioning of the European Union (TFEU), the EU Directive on Electronic Commerce, the EU's General Data Protection Regulation (GDPR, which comes into force in May 2018), the EC Merger Regulation and the European Commission's Unfair Commercial Practices Directive (UCPD).

At the national level, Germany's most important body of relevant law is the Act Against Restraints of Competition (GWB), alongside the Unfair Competition Act (UWG), the Data Protection Act (BDSG) and the Copyright Act (UrhG). Depending on the specific business model, other relevant legal norms also apply at both levels. Examples include consumer protection legislation and sector-specific regulatory provisions (particularly for telecommunication services).

All competition laws that are essential to the functioning of the single market are under the sole jurisdiction of the European Union. Unlike US law, for example, which adopts more of a case law approach, EU law is very heavily shaped by principles. Having said that, elements of US law are increasingly also finding their way into the EU – one topical example being the right of access to files for parties who have suffered damage due to a cartel. The legal situation in China is different again. Here, players such as Alibaba and Tencent benefit from protectionist regulation, although they are also exposed to the influence of the Communist Party.

The European and German legal systems have three instruments to safeguard competition: a ban on cartels, the prohibition of abuse, and merger control. Free competition is the benchmark system for antitrust law: Every distortion or impairment of this target status is to be halted. Especially companies that dominate the market – and companies of systemic importance all the more so – need to be supervised as they can pose a threat to free competition.

Institutionally, the legal system is underpinned by European and national supervisory authorities. In the case of Germany, these are:

- The European Commission's Directorate-General for Competition, which, together with the member states' competition authorities, enforces Europe's competition laws (Articles 101–109 TFEU)
- The Bundeskartellamt, Germany's independent competition authority, together with the supervisory activities of the Federal Ministry for Economic Affairs and the possibility of ministerial approval
- The Monopolies Commission, which advises federal government and lawmaking bodies but cannot intervene directly in competition and regulatory matters

These supervisory authorities are complemented by the following judicial bodies:

- The European Court (EC) and the European Court of Justice (ECJ), which are responsible for the consistent interpretation and application of competition laws in the European Union

Companies that dominate the market can pose a threat to free competition.

- The relevant national courts (in Germany, these are the Higher Regional Court in Düsseldorf and the Federal Supreme Court)

Antitrust law, which combines with fair trading law to constitute competition law, is a living entity. It is shaped by indefinite legal concepts that enable a constant regulatory policy framework to be established while also accommodating dynamic developments and innovations. Some of the concepts that require further specification are outlined here:

Relevant market | This must be defined in terms of material dimension (what product?) and geographical scope (what area?). Functional interchangeability and the existence of objectively identical competitive conditions are the respective criteria. On this basis, the European Commission now also applies merger control to markets in which free services are provided ("third market construction"). In the recent past, national antitrust practice too has taken account of the existence of markets involving the free sourcing and provision of ser-

“We encounter a series of new economic and legal questions in the Internet economy.”

Andreas Mundt
President of the Bundeskartellamt

vices. The 9th amendment to Germany's Act Against Restraints of Competition (GWB) is currently in consultation and features similar approaches.

Market-dominating position | According to the European Court of Justice, such a position exists when the economic strength of a company allows it to behave largely independently of competitors, customers and consumers. At the European level, this is regularly assumed to be the case as of a 50% market share. Germany sets the bar lower at 40%. Either way, these thresholds are irrelevant if a market remains fundamentally open to attack (potential competition).

Essential facility | This concept states that a company that controls an essential facility must not exploit its position by refusing possible access and thereby excluding effective competition on downstream levels. In the data-driven Internet economy, there are good reasons why access to infrastructure-relevant data can constitute a kind of essential facility, because exclusive data pools in the areas of transportation and healthcare, for example, can potentially become barriers to market entry.

Exclusionary conduct | An infringement of that kind is given if the possibilities for competition are restricted, e.g. by price fixing, denial of access and the leveraging of market power. This could be the case in particular if digital platforms deny their competitors important channels of access to infrastructure, information and resources, for example, or if they attempt to transfer their dominant position from one market to another.

Exploitative abuse | This condition derives from an imbalance between performance and consideration. In our current context, exploitative abuse is conceivable in the form of excessive access to data, for example.

The concept of abuse is linked to the market structure and to "normal" competitive behavior. Companies in a market-dominating position that regularly deviate from the instruments of normal product and service competition are thus guilty of abuse. In this context, one area of unfair competition law must also be discussed:

Business practices | According to the UCPD, business practices include all actions, omissions, behaviors and all other forms of communication by a merchant with the aim of selling, advertising or supplying products for end consumers. "Professional diligence" is the standard against which such business practices are normally measured. The provisions of the UCPD are binding only for the exchange of goods between merchants and end customers (B2C). However, EU member states are also free to apply them in the B2B segment as well.

The customary analytical approach in antitrust proceedings begins with a description of the market boundaries in order to define the relevant market. It continues with an analysis of market power to prove the existence of a dominant position. It then ends with an assessment of concrete behavior in order to determine whether abuses have indeed been committed. Breaches of antitrust law can entail fines of up to one tenth of the company's worldwide revenue.

2. Where action is needed

As the regulatory policy framework continues to evolve, especially with regard to the application of law, a question must be asked: Do the above rules – individually or perhaps even collectively – need to be adjusted to keep up with dynamic developments in the Internet economy and that of digital platforms, and to do justice to the peculiarities of their business models? A modern legal framework is absolutely imperative if Europe's Internet economy is to bring forth potent platform players while also fostering the intense competition that creates vast innovation potential.

Antitrust law remains the obvious instrument to uphold fair competition. Its various tools must be applied consistently, because competition can only be kept alive in the context of new market situations if the law is seen to be highly effective. To facilitate the effective application of law, however, it is necessary to update and give a more concrete legal form to antitrust provisions. Additionally, the possible need for further legislation must be examined: As things stand, no framework is in place to guarantee the neutrality of infrastructure-like platforms and ecosystems.

Since the platform economy is a labyrinth of multi-sided markets and complex interrelationships, there are some areas of activity where legal norms governing competition are either impracticable or vague. Fair taxation is a case in point, and one that certainly cannot be restricted to digital platforms. Many international corporations today adopt tax optimization and avoidance strategies. The (legal) pursuit of such strategies can be halted only by staking out the limits of international tax competition and rigorously plugging tax loopholes.

As we home in on concrete challenges, let us begin by addressing those areas where existing law must first and foremost be made more effective, and where more incremental adjustments (such as clearer specifications) are necessary. These areas lead us to those topics where major and, in many cases, very fundamental change is called for.

Updates to existing laws

A fundamental legal redesign is not needed in the following areas, because existing laws can, to a large extent, be usefully updated, developed and improved.

Data protection | Access to user groups and their data sets is digital platforms' most valuable asset (and is ultimately the non-monetary consideration "paid" for what are otherwise free services). Legal appraisals of usage in practice should take account of this circumstance. The law as it stands already ensures that data can be collected only for "specific, explicit and legitimate purposes". It also insists that reasonable interests of the data subjects must be protected in the process. Excessive data collection practices can, under certain circumstances, even be deemed the abuse of terms of use. All these issues are already covered by existing law but need to be spelled out more clearly in antitrust practice. Moreover, efforts to educate consumers must be stepped up so that more people actually make use of their rights. It is also important to ensure that existing provisions requiring

clarification in practice are interpreted and enforced consistently throughout Europe. This step must be taken to avoid the competitive disadvantages of a regulatory gap within the single market.

Illegal content | The current ruling is that platforms must take down illegal content as soon as it comes to their notice. This provision has proven its value and does not need to be tightened. Given the sheer deluge of entries and contributions (Facebook has more than a billion users and Twitter registers 21 million tweets every day!), any form of permanent monitoring or the proactive filtering of illegal content would be too much for platform operators to handle. Content platforms worldwide already employ at least 100 million "moderators" to eliminate illegal content that is reported by other users as violations of existing guidelines.

Network effects | These effects are at the core of digital platforms' business models, and recent antitrust law practice recognizes their importance to the fabric of competition. In Germany, the independent competition authority's move to ban price parity ("best price" clauses) on hotel portals has for the first time underscored the significance of network effects in the context of competition law. The Higher Regional Court in Düsseldorf confirmed this view in January 2015, such that the principle has found its way into the catalog of criteria to be reviewed for the amendment of Germany's Act Against Restraints of Competition (GWB). It should be noted that network effects can be one of several indicators of market dominance. There is a need to adjust legal rulings in order to clarify and harmonize the legal situation across Europe.

Merger control | In the EU and in Germany, the question of whether the completion of a merger is formally subject to official merger controls is linked strictly to the need for both parties to reach certain minimum revenue thresholds. In the context of digital markets, this practice leaves an unprotected loophole: Internet services that have experienced a successful launch and are growing fast normally generate only low revenues. What they do possess, however, are valuable data resources that market leaders have hitherto been able to snap up with no official controls in place (even where the buyers generate revenues in the billions). There is therefore an urgent need to align antitrust practice with the peculiarities of a digital economy that is heavily concentrated and whose most important currency consists of user numbers and user data. Only then can developments that would be fatal to the competitive situation of European Internet companies be averted. In light of this need, the changes relating to the inclusion of transaction values as an applicability criterion which are planned for the 9th amendment to Germany's Act Against Restraints of Competition (GWB) are to be welcomed and should be applied throughout Europe.

Pricing | For systemic reasons, digital platforms have an asymmetric pricing mechanism. Where it is needed to acquire users or address individual market conditions, this practice should be factored into the application of antitrust law. At the same time, market-dominating companies must not be allowed to abuse their position in regard to private and corporate customers by demanding inflated prices. The requirement in the B2B segment is to set prices in such a way that access to a

platform is and remains possible on reasonable terms and conditions. Beyond that, the B2C segment is also exposed to the danger of price discrimination based on sociodemographic attributes or personal preferences. Such discrimination is already technically feasible. Action must likewise be taken as soon as offers of insurance (for example) appear on the market whose premiums are no longer affordable for some people due to high individual health risks. Essentially, both forms of abusive pricing – in respect of corporate and retail customers alike – can already be sanctioned on the basis of existing law. In practice, application of this law is less rigorous than it needs to be.

Adjustments and new laws

In many areas, the changes set in motion by the market activities of digital platforms are so extensive that it seems expedient to thoroughly overhaul or even completely rewrite legal norms and the rules of competition. Such amendments are especially vital in order to reliably cover the commercial realities of multi-sided platform markets from the perspective of competition law. In the context of antitrust inquiry, for example, adjustments to the application of law have at times been extremely laborious. They still also require legal clarification if proceedings are to be accelerated in the future.

Business practices | The main criticism of the way in which digital platforms conduct their business concerns their relationships with customers and suppliers and the power imbalance that these relationships reflect. Legal norms already govern price transparency as well as terms and conditions for contractual partners, of course. However, related proceedings may need to be harmonized and made more effective to avoid obstacles to transnational trade. One way to resolve these problems could be for an amended version of the UCPD, whose provisions currently only apply to the B2C segment, to also be strictly applied to B2B relationships and to be rigorously translated into national law.

With regard to business practices, existing law requires major improvements in three areas: It must be ensured that search engines do not consciously mislead consumers or show them irrelevant "hits" out of purely commercial interest. Paid search results must therefore be clearly indicated as such. Where comparison platforms double up as merchants in their own right, they should be required to disclose information about market definitions, selection criteria and the freshness of the information they supply. In the case of licensing arrangements, care must be taken to ensure that the holders of rights do not become competitive bottlenecks. As a last resort, strategically important patents that are indispensable to key business processes may have to be assessed along the lines of "essential facilities".

Data handling | Large and dense collections of data can lay the foundation for a platform operator's market-dominating position. But they can also close off entire markets. Every company aims to gather as much information as possible about its customers in order to improve its own offerings, target customers more selectively and tap new areas of business. Data is therefore an important input factor whose availability can be essential to a given business model. This is especially true

of infrastructure-related information that is of considerable public interest (e.g. geodata to model traffic flows or the spread of epidemics).

Looking at the sheer volume and density of data in the hands of Alphabet/Google, for example, it is becoming increasingly difficult to find alternative but equivalent data pools (a criterion known as substitutability). Accordingly, it is worth considering whether infrastructure-related data should, subject to reasonable terms and conditions, be made available to all interested parties via open interfaces. A clear and consistent inquiry process should be created regarding denial of access. Without such access, the barriers to market entry become very high indeed – especially in cases where the use of this data is restricted or prevented by licensing arrangements or other instruments of control. Relevant valuation approaches are reflected in the current draft amendment to German competition law and in various working papers published by the competition authorities in Germany and France. One recent decision by Germany's independent competition authority forcing players to make login information (PINs and TANs) available for alternative, bank-independent payment processes also shows that the shared use of infrastructure-related data by competitors is possible and must be enabled.

Interoperability | Closely linked to the use of data by third parties is the issue of interoperability. This refers to the ability to share, exchange and further process users' information. Interoperability is often prevented by deliberate incompatibility: Some digital platforms simply do not provide open interfaces via which external developers could contribute their ideas and products. A lack of interoperability must be seen to raise competitive concerns if it effectively restricts access to data pools for which there is no substitute. Conversely, interoperability can help prevent the occurrence of lock-in effects, thereby permitting genuine competition between platforms.

Legal clarification is needed if antitrust inquiry practice is to be accelerated in the future.

Verticalization | The vertical diversification of digital platforms is probably the biggest single challenge to competition law. Having different services integrated under one roof does yield benefits for the user: ease of use, greater convenience and the seamless integration of applications. On the other hand, preinstalled software and bundled offerings in particular can have a harmful effect on competition. Users then opt for products not because they are particularly good, but simply out of convenience or necessity. At the same time, verticalization drives the narrowing of markets and can even push them toward a tipping point. Suitable unbundling mea-

"Adjustments to the legal framework and administrative practice are necessary in light of the developments on digital markets."

Professor Daniel Zimmer
Former Chairman of the German Monopolies Commission

sures should therefore be considered, such as the rigorous prohibition of preinstalled vertical services that favor the formation of closed systems.

Platform neutrality | To enable fair competition between platforms and in the orbit around their ecosystems, it is of critical importance for platforms to assume neutral behavior with regard to upstream and downstream links in the value chain. Special care must be taken to ensure that market-dominating positions are not and cannot be exploited and abused. Legal clarification of the rule that market-dominating platforms of systemic importance in particular (and especially platforms that effectively serve as infrastructures) must adopt this neutral stance toward upstream and downstream value chain links is an urgent imperative.

Freedom of choice | The decision to use a platform should be made based on the quality of its offerings, its user orientation and cost structure, not for lack of alternatives or because of excessive switching costs. It is a fact that all attempts to improve data portability have met with little progress: It is still the case that very few users ever avail themselves of the option of moving their personal data to a new platform. That, however, could change when the General Data Protection Regulation (GDPR) comes into force in May 2018. Why? Because data portability will then be prescribed by law, requiring companies to deliver it to a greater extent than in the past.

The coming regulations are restricted solely to personal data. They do not apply to other types of data (reviews, purchase histories, photos stored in the cloud etc.) whose lack of portability remains an obstacle to competition in many cases. In reality, it is only worth switching to a new provider if the benefits of the new platform outweigh the switching costs. Yet these are all the higher the longer a service has been used in the past and the more restrictive the options are for transferring stored data to rival platforms. On this score, a legal counterweight to existing lock-in effects is needed if fresh life is to be injected into competition. One aim of the European Commission's Free Flow of Data Initiative is to establish a framework to this effect.

All of the actions and new legal provisions discussed above should uphold the following principles:

- Subsidiarity. New rules are needed wherever existing competition law fails and where there is reason to fear that powerful market players could cause lasting damage to competition.
- Dynamic stimulus. Any action taken should not protect companies with inferior business models, but should release potential for innovation.
- Proportionality. The cure must not be worse than the disease. Cost/benefit considerations should be weighed carefully before each action is taken.
- 360-degree perspective. New legal provisions must always keep all aspects of the market and all user groups in mind. Due account must be taken of the interdependency of multi-sided markets.
- Performance principle. Market success must be rewarded and innovation must pay dividends. However, this principle cannot be used to justify exploiting market power at the expense of competition.

The basic rule of thumb should be: as much market as possible, as many rules as necessary. Only then can welfare gains be maximized for all European citizens. The Internet economy in particular boasts heavily customer-centric business models and strong self-healing powers. These must be stimulated and encouraged! By and large, this can all be done within the confines of the existing legal framework. There is no need to change the whole system and switch to horizontal platform regulation and prohibitions *per se*. Rather, legislative adjustments must make sure that the obligation of neutrality imposed on platforms with systemic importance facilitates fair competition.

At the same time, competition law is in urgent need of an overhaul to rein in abusive behavior by platforms that have excessive market power. The first legislative steps have already been taken – witness the amendment to German competition law, which is currently being debated. By no means least, existing (and future) law must be rendered more effective, for example by accelerating legal proceedings. A coordinated European approach should be the medium-term goal. If these steps are not taken, the world's leading platform countries – the US and China – will continue to confront Europe with *faits accomplis*.

3. Plan of action

Having outlined the main areas where action is needed, let us now look at how these insights can be translated into a conceptual plan. This section formulates proposals for a new antitrust inquiry process based on which market power and systemic importance in multi-sided markets can be identified. The individual points requiring investigation derive directly from the pyramid structure presented on pages 48 ff., according to which higher-level platforms merit different treatment under competition law, with especially strict demands to be placed on systems that effectively serve as infrastructures.

Inquiry process

The existence of a given scope of behavior for which insufficient controls are in place is the precondition for opening antitrust proceedings. But when is such a scope of behavior indeed given? Competition experts have a hard time assessing the market power of digital platforms and the possible abuse thereof, because common benchmark tests such as SSNIP ("small but significant non-transitory increases in price") do not work in multi-sided markets. Nor do existing procedures cover the issue of systemic importance. For this reason, we have sketched a new antitrust inquiry process whose key parameters are: reach, user penetration, form of use and data-induced lock-in (as the primary indicators to measure market power); access to Internet services, technology-induced lock-in, information filtering and verticality (to assess systemic importance in particular); and innovative potential (as a general and exonerating factor). →P
This inquiry process establishes "market contestabil-

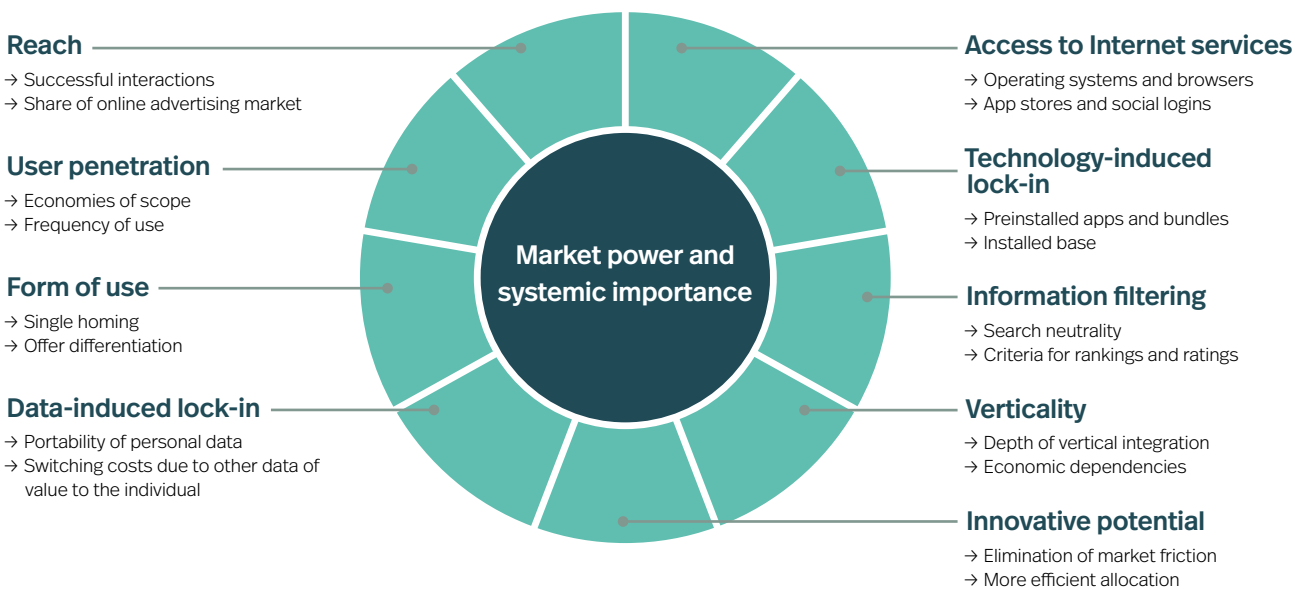
ity" as the principal yardstick. Accordingly, its analysis focuses on the issues of market dominance and functional alternatives.

Step 1 — Reach | In the traditional inquiry process, a company's share of the relevant market is used as the first filter to evaluate market power. In the case of digital platforms, however, this approach misses the mark. Taking the number of users (of whom comparatively few may be active on a regular basis) as the measure of market share for free services says little about the quality and value of a network.

Successful interactions are of primary importance to the reach of a digital platform and, hence, to its market performance. Unique visitors are a key indicator of the frequency with which a service is accessed. Normally recorded as a matter of routine, this score is the clearest

P Key criteria: A balanced analysis of the market power and systemic importance of digital platforms should involve 9 steps

Antitrust inquiry process



Source: Roland Berger

expression of a platform's competitive advantage over the next-strongest platform in the same segment. To take just one example: In terms of accounts and occasional users, Facebook lags behind Google+, whose high number of users is attributable above all to the fact that the Google+ network is linked to other services from the same company. In terms of regular users, however, Facebook has a huge lead – a strong indication that it generates more (and more valuable) interactions and thus has a greater reach. →Q

A digital platform's share of the online advertising market, for example, can be another indicator of its reach.

Step 2 — User penetration | Alongside the size of user groups, the degree to which they are penetrated with interactions and transactions of all kinds is another important factor when assessing the quality and market power of a network. Economies of scope are a key indicator of penetration, as they allow a platform to leverage its market power. Operators of their own ecosystems in particular can enjoy windfall profits by using tools such as preinstalled apps, product tying and bundled offerings to map the user base for one market straight onto another market (at least in part).

The reach of services on various levels (i.e. the cumulative total of regular users of an operating system, a search engine, a content portal and/or a messenger on an integrated platform, for example) can be used to approximate economies of scope. Another reason why it is important to take account of these synergies across services is that they also produce the richest data pools and give further impetus to the "superstar effect" (whereby popularity generates greater popularity).

Frequency of use is another useful criterion. Deep penetration can be assumed in particular when users frequently log into a service – an indication that the service in question has become if not indispensable, then certainly a central aspect of their daily life.

Step 3 — Form of use | Another point that lends itself to inspection is the prevalent form of use, as this largely determines the switching costs and, hence, whether functional alternatives are even considered. A distinction is drawn between two forms of use: single homing (where only one platform is used in a given segment) and multi-homing (where several services are used in parallel). Where single homing predominates, the danger that markets could reach a tipping point grows. The process can be triggered even where a dominant position exists only on one side of the market, as the platform in question becomes indispensable to one user group. This effect is then magnified where minor options for differentiation through product and service offerings exist, for example in the form of niche products.

Single homing is effectively the natural form of use for some platforms and services. That is why eBay, for example, was able to establish itself as the leading auction platform, because single homing maximizes market aggregation, yielding benefits for users on both sides. This form of use is inescapable for operating systems. By contrast, there is no obvious reason for single homing with search engines, for example. In this case, the decision to

use just one alternative is due above all to the search engine installed by default, or even to human laziness and users' aversion to making changes that could be risky.

Step 4 — Data-induced lock-in | Pronounced lock-in effects are a further indicator of high switching costs. Every platform generates a measure of customer loyalty through its networks (which are lost if you leave the platform), the purchase history (better matching) and user ratings (where you start again from scratch if you move to a different platform). Users' natural inertia also presents an obstacle to initiating a new login procedure.

For the purposes of competition, however, data-induced lock-in is especially critical. If data are not portable – i.e. if users cannot take their personal (and maybe other) data with them when they move – then the willingness to switch plunges dramatically. The consequence is that even innovative offerings have difficulty gaining a foothold. The market is thus foreclosed and users' freedom of choice is restricted.

High switching costs in the form of data-induced lock-ins (and single homing) stand in the way of innovation. Understandably, platform operators show little interest in taking the initiative to develop technical standards that let their users view their personal (and possibly other) data at any time, not to mention making this data downloadable and transferable. Stimulus from the demand side is needed to prod them into action. That is also why consumer protection bodies still have a lot of work to do to help users perceive and understand the value of data. Beyond these considerations, the principle of data portability should be widened to include other data pools. It is not only personal data that keeps users from defecting. High switching costs are also caused by the data types already mentioned, such as purchase histories, chronicles, albums and lists that are of great personal value, but that would be lost at a stroke without portability. The General Data Protection Regulation should apply to this data too; and this consideration should also be factored into the inquiry process.

→ ***While steps 1 through 4 concerned themselves primarily with the measurement of market power, steps 5 through 8 focus above all on the assessment of systemic importance.***

Step 5 — Access to Internet services | Top of the list here is the issue of access to Internet services. Platforms that effectively serve as infrastructures are what make it technically possible to utilize these services in the first place. They can thus position themselves as an indispensable interface that controls access to an essential facility. This kind of quality is attributable above all to operating systems and browsers (and especially to combinations of the two), but also to app stores that serve as a competitive bottleneck for mobile application software. The same goes for social logins that, in conjunction with single homing, can create a closed system. In extreme cases, users never again venture outside this "network in a network". All their data tracks remain with one and the same operator.

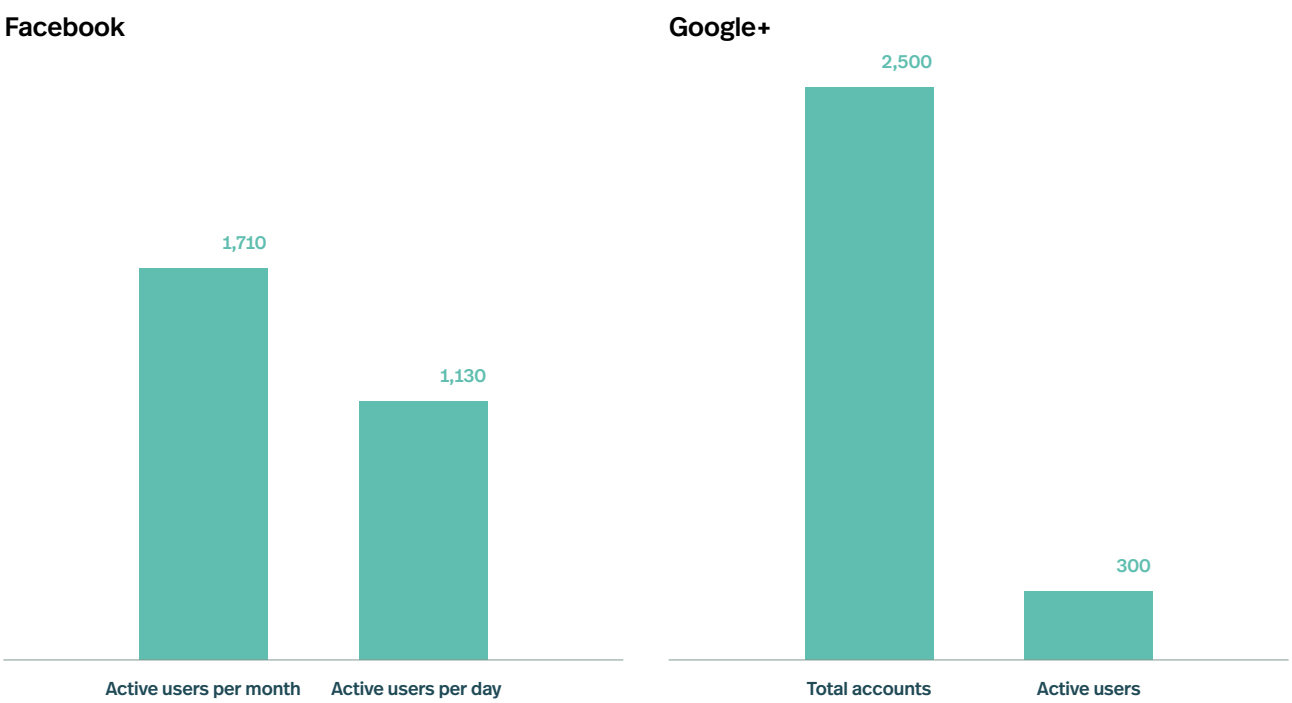
Step 6 — Technology-induced lock-in | Second, systemic importance can stem from the fact that certain

technical facilities and equipment constitute a *de facto* standard which users can avoid only at high cost to themselves.

This situation arises in particular when services are preinstalled and sold in bundles. For users of Android smartphones, it is now virtually impossible to bypass Google's proprietary services. One reason is that, owing to Google's licensing policy, these services are installed on devices ex works and cannot readily be deleted. Search and Chrome always fall into this category – as, in most cases, do Play Store, Gmail, Google+, Google Maps and YouTube. Moreover, these services are offered as a package, making it difficult to swap individual ap-

Q The digital place to be: Facebook boasts vigorous user activity – Google+ resembles a ghost town

Number of accounts/users [millions]



Sources: Facebook; Google; TechTimes.com; Roland Berger

plications. As a result, even rivals with better-quality services are effectively unable to compete. Nor is that all: The size of the installed base makes the option of switching unattractive, as compatibility problems may ensue (a point that has for years secured substantial market shares for Microsoft's desktop products).

Preinstalled services, product bundles and the size of the installed base add up to a technology-induced lock-in whose ultimate effect is to weaken competition and oppose innovation. Given the systemic importance of the individual components and the high cost of switching, however, there is scarcely any viable alternative.

Step 7 — Information filtering | Another point that must be analyzed to determine systemic importance (and market power too) is the way in which information is filtered. Users only ever see a few small drops of the vast ocean of information that is available even for niche topics on the Internet. Algorithms – computing routines – determine what this or that platform regards as relevant to its users (the "filter bubble" phenomenon). As a rule, however, the underlying criteria on which selection is made are trade secrets that are not publicly accessible. Especially in the case of the conflicts of interest discussed above – for example where a platform acts as both merchant and intermediary – search neutrality is therefore at risk. Search neutrality presupposes that all results satisfy minimum requirements in terms of equal treatment, objectivity, relevance and transparency.

This point is so important because studies attest that even just the second entry in a (natural) hit list is clicked only half as often as the top entry, which accounts for about a third of all clicks (the "click-through rate"). Depending on the strength of the given brand, the gap between the first and second results in the list can even be significantly wider.

There is no such thing as absolute search and information neutrality, and platforms should be granted a measure of discretion regarding what they believe is of relevance to users. Even so, arbitrary hit list positions or rankings and ratings that are driven predominantly by commercial interests must be classed as of systemic importance even where a platform's market power is only moderate, because they contradict the platform's value proposition and the expectations of its users. This is true especially in the case of services that assume a portal function (e.g. search engines, advertising allocators and hybrid marketplaces). These services must submit to investigation of their selection and comparison criteria, as distorted information filtering may be associated with persistent discrimination against the competition.

Step 8 — Verticality | Another point to be examined is the scope of a platform's vertical integration and the extent to which upstream and/or downstream value chain processes can become dependent on a platform.

Media websites and apps are a good example of such dependency. They make content available that attracts attention. However, intermediation – in this case the user-centric addition of advertising – is handled by platforms such as Google. Specifically, AdSense is used for context-sensitive display advertising and DoubleClick

“Absolute bans should be only a measure of last resort.”

Elżbieta Bieńkowska
EU Commissioner for the Internal Market, Industry, Entrepreneurship and SMEs

as an analysis, management and real-time-bidding (RTB) auction tool. The content providers themselves are left with only a fraction of the value added.

Trading platforms such as Amazon supply another example. They not only sell their partners' products, but also handle payment and fulfillment functions and even web services on behalf of those partners. In many cases, the partner companies would be unable to provide these services on their own, nor would they have access to a large customer base. Trading platforms are prohibited from abusing this important interface function, however, as it is linked to a gatekeeping function. In extreme cases – as with Google's mobile operating system Android – partners must obtain a license to even be able to do business on the given market.

These exceptional economic relationships put market-dominant platforms in a positon to force conditions such as price parity, most-favored status and exclusivity agreements on their partners. Verticality is thus a powerful indicator of systemic importance and, at the same time, of market dominance. Players not linked into a platform can quite simply not do any business – at least not with the prospect of success.

Step 9 — Innovative potential | Lastly, innovative potential must be evaluated as an exonerating factor. Assuming that a platform fails the test for most or all of the points described above, an antitrust inquiry process may still turn out in favor of a market-dominating company under certain circumstances. Specifically, this is the case if the company injects dynamic stimulus into the market and makes a significant contribution to increasing economic welfare by means of product innovations, business model innovations, its ability to overcome market friction and improvements to the market's allocation efficiency. However, this qualifying element must under no circumstances be taken as *carte blanche* for behavior that is detrimental to competition.

Legal appraisal

A final legal assessment of all these points should examine their collective merits: Is the current constellation likely to foreclose a market? Could even potential competition largely be rendered impossible? Are there concrete instances of abuse with which the company has consciously achieved this status?

Fines or other sanctions should be imposed only if all these questions can, predominantly or without reservation, be answered with a "yes". If worst comes to worst, it may be necessary to intervene in the structure of the company by unbundling services in cases where packaged products and offerings preclude genuine freedom of choice and pose a threat to competition.

AGENDA FOR GROWTH: RECOMMENDATIONS FOR POLITICAL ACTION

Changed market realities demand a new regulatory framework. Our ten-point program charts the course for a vibrant European digital economy.

The growing strength of digital platforms is bringing lasting change to the realities of the market. But it also opens up huge potential for the European Internet economy. We began our discussion by asking how further successful platforms can flourish and grow in Europe. Essential to the realization of this potential is fair competition that also allows new players to enter the market.

Changed market realities require legal adjustments in line with the new conditions. This section therefore presents ten concrete proposals on how the legal and regulatory framework for digital platforms can be designed in such a way that, across the whole of Europe, free, unrestrained and innovation-friendly competition can be safeguarded in the Internet economy and, in particular, between digital platforms. →R

1 Promote the Digital Single Market (DSM)

Europe needs a harmonized legal framework for the Digital Single Market. Only if today's legacy patchwork of legal provisions can be woven together into a clear and coordinated set of rules can the Internet economy develop its full dynamic potential. The European Commission estimates that Europe is wasting economic potential of EUR 415 billion in additional growth per year simply because barriers to the market prevent the welfare effects of a Digital Single Market from being fully exploited. That is why the measures envisaged by the Commission's DSM strategy – such as better online access for consumers and companies, attractive conditions for flourishing digital networks and services, and maximized use of the European digital industry's growth potential – must be implemented without delay. At the same time, further steps must be taken to harmonize copyright, tax, consumer protection and data protection law. Uniform standards for all Internet companies that operate in Europe will provide greater legal certainty and put a stop to the cherry-picking practices that are common at present. It is important to prevent a scramble for the lowest level of regulation, as that would lead to similarly negative economic consequences to those currently observable as a result of tax competition within Europe.

2 Eliminate regulatory asymmetry

The rules of competition in the Internet economy must apply across all markets and must be sector-neutral. This means that the place of performance principle must be applied consistently. In all areas of relevance to competition, the same rules have to be valid for all providers, irrespective of their origin. These rules too must be im-

plemented and enforced swiftly. Only then is it possible to prevent platforms that effectively serve as infrastructures ("bottlenecks") from turning regulatory gaps to their own competitive advantage. As different markets increasingly converge, it is equally important to evaluate outdated regulations and, where legal provisions are still justifiable, apply them rigorously to all market players.

3 Adjust the supervision of antitrust abuses

This proven instrument of competition control must be adapted to digital markets and applied effectively. Above all, analysis of the materially relevant market and determination of a market-dominating position must be aligned with the characteristics of digital platform markets (for example by including markets where products and services are free of charge). The resultant legal clarity would in future enable the supervisory authorities to react more quickly to abusive behavior. That is important, because only swift and rigorous intervention by the competition authorities can effectively prevent the "bottlenecks" and "gatekeepers" in the Internet economy from abusing their market power. To further shorten response times, the resources available to the supervisory authorities should be improved. A sufficient number of suitably qualified people and adequate technological tools and facilities are essential if – as is needed – what are often highly complex competition proceedings relating to the Internet economy are to become both faster and more effective.

4 Revise the criteria for company mergers

As envisaged in the amendment to the German Act Against Restraints of Competition (GWB), merger

Uniform standards for all Internet companies that operate in Europe will provide greater legal certainty. It is important to prevent a scramble for the lowest level of regulation.

A European agenda for growth, competition and innovation

1. **Promote the Digital Single Market**
   Europe must harmonize its patchwork of legal provisions if it is to realize the full potential of the Digital Single Market – an extra EUR 415 billion growth per year.
2. **Eliminate regulatory asymmetry**
   The rules of competition for the Internet economy must apply across all markets. At the same time, they have to be sector-neutral. All providers in a given market should enjoy equal rights!
3. **Adjust the supervision of antitrust abuses**
   Antitrust authorities need clear guidelines and more resources so that they can react more quickly to cases of abuse in the digital markets.
4. **Revise the criteria for company mergers**
   Alongside revenue, the transaction value (purchase price) should also serve as a merger control criterion in digital markets.
5. **Improve data portability**
   Consumers should be able to take all data of personal value with them when they move to another platform. Companies should be allowed to use infrastructure-related data on reasonable terms.
6. **Rigorously unbundle vertical services**
   It must be made more difficult to create closed systems on the basis of preinstalled services. Freedom of choice is to be made compulsory for key applications.
7. **Ensure platform neutrality**
   Owners of important points of access to infrastructure, for example, should grant this access without discrimination. To this end, obligations to enter into contracts could be applied Europe-wide.
8. **Set up a European digital agency**
   Ideally, digital market competencies at the EU level should be brought together under one roof in order to keep pace with the dynamic development of the Internet economy and its key players.
9. **Form alliances**
   Value-added platform business must be thought through on a large, cross-border scale. Broad transnational alliances should be formed to develop standards and/or subsidize investments.
10. **Fund and promote innovative start-ups**
    Start-ups need more growth capital if Europe is to reap greater benefits from the innovative power of and value added by the digital (platform) economy.

control activities should take account not only of revenue, but also of the transaction value or purchase price. If it is to be used to full effect, this criterion must apply throughout Europe and for all platforms. Merger control is currently largely ineffective in digital markets. It needs a wider scope do the job it is supposed to do: safeguard competition that increases welfare, encourages innovation and leaves genuine freedom of choice.

5 Improve data portability

Beyond the portability of personal data guaranteed by the GDPR, consumers must be enabled to also take other data with them when they switch providers. Open interfaces and interoperable formats lay the foundation on which to combat lock-in effects. This is true both for platforms that effectively serve as infrastructures ("bottlenecks") and for those that assume a portal function ("gatekeepers"). Suitable incentives should be defined in the European Commission's Free Flow of Data Initiative. In addition, it is worth considering to what extent market-dominating companies should be required to give interested parties access to infrastructure-related data, e.g. in the fields of transportation and healthcare.

6 Rigorously unbundle vertical services

To prevent platforms that effectively serve as infrastructures from unfairly extending their systemic importance into upstream and downstream markets, harming competition and reducing welfare in the process, hitherto closed systems must be made more accessible. The need for vertical unbundling is especially acute in the case of integrated services, which, for example, link preinstalled services to the operating system (as a "platform platform"). It is also vital in cases where platforms give their own products precedence over those of competitors for no valid reason. As enforced in 2004 in the antitrust conditions imposed on Microsoft Windows, such unbundling can take the form of a ban on linking vertical services to the operating system. Conversely, this means that real freedom of choice should be compulsory for all applications that are essential to the regular and appropriate use of a platform.

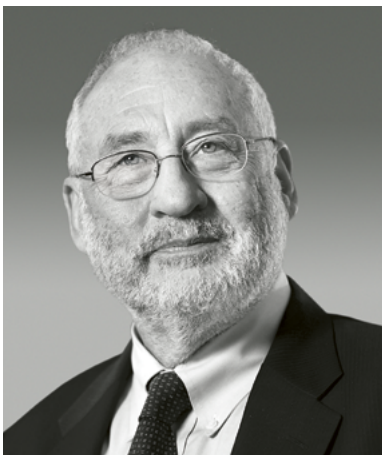
7 Ensure platform neutrality

The ongoing dispute between Apple and Spotify shows that the owners of important points of access to infrastructures, for example, must grant this access without discrimination. Access must never be tied to an obligation to also use other services – especially where a platform serves its own interests as the provider of a rival product. App stores in today's duopolistic world of mobile operating systems, but also other market-dominating platforms of systemic importance ("bottlenecks") must demonstrate neutrality in regard to their partners and, above all, their competitors. This must be done from the listing of new products to the terms of use and the payment systems that they offer. Suitable legal provisions must guarantee this neutrality across Europe, for example by attaching obligations to enter into a contract to reasonable conditions.

8 Set up a European digital agency

As a complement to the existing competition and regulatory authorities, an interdisciplinary agency should ideally be created that brings the various competencies for digital markets together under one roof.

“Europe can only work as a political entity if each country within Europe does not take actions that harm other countries.”



Professor Joseph Stiglitz
Former Chief Economist of the World Bank
and Nobel laureate

This kind of supranational authority would also make it easier to build up the IT, market and competition expertise needed to keep pace with the dynamic development of the Internet economy in general and digital platforms in particular.

9 **Join forces and form alliances**

For Europe too, the platform economy is a lucrative source of added value for the future. Yet it is crucial to "think big" – at least on a European scale, if not a global scale – when approaching this business. It is therefore essential to set aside parochialism and live out the concept of connectivity. That means not working against but together with one's competitors (ideally on a transnational basis), for example to develop standards. In many cases, it is also a useful exercise to think beyond one's own corporate and industry boundaries – to benefit from external innovation, for instance. The EU member states in particular would do well to heed the call for cross-border collaboration. The European Internet economy can only become more potent if, for example, expansion of the broadband infrastructure and the subsidization of investments are approached in a coordinated manner.

10 **Fund and promote innovative start-ups**

More growth capital and attractive financing models for innovative start-ups are the most effective ways for Europe to reap greater benefits from the value added by the digital (platform) economy. National funding instruments need to be realigned (see volume I, "Going digital"), and thought should be given to a shared European innovation funding program.

More growth capital and attractive financing models for innovative start-ups are the most effective ways for Europe to reap greater benefits from the value added by the digital economy.

TARGET SCENARIO: SUPERSTARS MADE IN EUROPE

To tap new growth, Europe needs a platform economy of its own, the conditions for which must now be put in place.

Growth in the world's most advanced economies has plateaued for many years. Annual GDP growth rates only reach 1.5% at best (inflation-adjusted CAGR for Germany, 1995–2015: 1.3%). The only two exceptions to this "secular stagnation" (Larry Summers et al.) are the US (2.4%) and China (9.4%) – two economies that enjoy the important twofold benefits of huge domestic markets and dynamic development of the Internet economy.

What can Europe learn from these facts? That fresh dynamism must be injected into its economy to break out of its low-growth trajectory; and that this dynamism can and must come above all from an innovative and fiercely competitive Internet economy within a Digital Single Market. Its key players – the companies with the best figures, the highest valuations and the most favorable strategic positioning – are digital platforms. If Europe wants to participate in their potential to add value, it needs a platform economy of its own.

There are reservations about digital platforms, prompted especially by the debate about the varying importance which different countries attach to data protection, and reinforced by NSA espionage. Many of these reservations are unfounded, however. As of 2018, the General Data Protection Regulation, for example, will harmonize and strengthen data protection within the EU. Ultimately, one thing is clear: Users enjoy considerable freedom of choice on the Internet and, in the long run, opt for consumer-friendly providers.

Having said that, the superstars of the Internet economy need a legal framework – especially in relation to the use of infrastructures and improved access to essential facilities and data pools. And it is here that self-regulating mechanisms do not always work. Clear and consistent rules of competition must be rigorously applied to create fair and identical conditions. Before the legislator stakes out this legal framework, an informed debate is necessary about the concrete regulatory policy goals that are to be reached. We believe that the most important objective is for Europe to be able to use the innovative potential and welfare effects of digital platforms to the fullest. For that to happen, it is essential to keep markets open!

A suitable legal framework and its rigorous implementation are important first steps. But three other requirements must also be put in place. They are: attractive financing programs for start-ups, especially in the growth phase; a better start-up and innovation culture; and a powerful fiber optic infrastructure. Building on this foundation, Europe too will succeed in developing a vibrant platform economy.

“I believe that we must make much better use of the great opportunities offered by digital technologies, which know no borders.”

Jean-Claude Juncker
President of the European Commission

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